# Operations, Maintenance, and Monitoring Annual Report – 2019 Report No. 46

HOD Landfill Village of Antioch, Illinois

Prepared for:

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## 1.0 INTRODUCTION

This annual progress report (Report) summarizes the operation, maintenance, and monitoring (OM&M) activities performed by Waste Management of Illinois, Inc. (WMII) at the HOD Landfill site (Site) in Lake County, Illinois, during the period January 1 through December 31, 2019. Those activities are related to the existing remedial components at the Site, which include:

- Source control measures
  - OM&M of the landfill gas management system
  - OM&M of the landfill leachate collection system
  - Maintenance and monitoring of the landfill cap
- Landfill gas, leachate, groundwater, and surface water sampling and analysis

The OM&M activities performed during the first semi-annual 2019 period (January 1 to June 30, 2019) at the Site were transmitted in a document entitled "Operations, Maintenance, and Monitoring Progress Report No. 45," dated April 2020 prepared by SCS Engineers (SCS). Two copies of that document, and an electronic copy on compact disc (CD), were transmitted by WMII to Ms. Karen Mason-Smith at the U.S. Environmental Protection Agency (USEPA) by letter dated April 23, 2020. An additional copy was also transmitted by that cover letter to Ms. Nicole Wilson at the Illinois Environmental Protection Agency (IEPA).

The semi-annual and annual progress reports are currently prepared by SCS to fulfill the requirements of Subsection 7.1 of the Performance Standards Verification Plan (PSVP, RMT April 2008) for the Site. This report is the 46th periodic OM&M submittal for the Site. In addition to transmitting the data obtained during the second semi-annual period (July to December 2019) at the Site, this Report also includes an evaluation of leachate, groundwater, and surface water data from the entire period (i.e., 2019). The evaluation includes a comparison of that data to established criteria for the Site (i.e., site-wide protection standards) and to historical data, where warranted.

Data from analysis of leachate, groundwater, and surface water samples collected semi-annually at the Site is also screened using the established site-wide protection standards identified in the PSVP. These semi-annual reports are also prepared by SCS and transmitted to the USEPA and IEPA. These reports, typically referred to as exceedance reports, were dated July 5, 2019, and January 6, 2020, for the 2019 reporting period. Table 1 of the January 6, 2020 document, was subsequently revised to include units of the identified compounds (i.e.,  $\mu$ g/L = micrograms per liter or mg/L = milligrams per liter) and submitted to USEPA by transmittal letter dated January 14, 2020.

USEPA prepared a document entitled "Third Five-Year Review Report for H.O.D. Landfill Superfund Site, Antioch, Lake County Illinois" dated September 24, 2015. That document presents USEPA's review of the performance of the selected remedy for the Site. USEPA provided notification by letter dated December 31, 2015, that the current remedial measures should be evaluated soon to determine whether cleanup goals will be achieved within a reasonable timeframe to ensure long-term protection at the Site. USEPA and WMII personnel met at the agency's office in Chicago, Illinois, on February 16, 2017, to discuss the issues and recommendations from the third 5-year review for the Site that were presented in USEPA's correspondence dated December 31, 2015. WMII summarized and presented a response to the items discussed at the meeting in a correspondence dated July 3, 2017. The next 5-year review for the Site is expected to be completed by USEPA in September 2020.

## 1.1 PROJECT BACKGROUND

## 1.1.1 Site History

The Site is located in the Village of Antioch, in Lake County, Illinois. The landfill area is approximately 51 acres within a total property area of 81 acres. Within the waste mass, there are two separate landfill areas. The "old landfill" consists of approximately 24 acres and is located on the western third of the property. The "new landfill," which consists of approximately 27 acres, is located directly east of, and is contiguous with, the "old landfill."

Permitted waste disposal activities began at the Site in 1963 and continued until approximately 1984. In 1989, the landfill Site was closed and a continuous soil cap was constructed over both filled areas. On August 20, 1990, the USEPA entered into Administrative Order on Consent with WMII for performance of a Remedial Investigation/Feasibility Study (RI/FS) at the Site. The RI activities began in 1990 and were subsequently completed in 1994. USEPA issued the Record of Decision (ROD) for the Site on September 28, 1998. The selected remedy for the Site included landfill cap improvements, enhanced gas collection and treatment, enhanced leachate collection, leachate treatment, monitored natural attenuation of groundwater, and institutional controls.

## 1.1.2 Remedial Design and Remedial Action Construction

On April 14, 1999, the USEPA issued a Unilateral Administrative Order (UAO) that directed WMII, as one of the Site respondents, to develop and implement a remedial design (RD) and remedial action (RA) plan to implement the remedy identified in the ROD. The RD and RA construction activities began at the Site on August 21, 2000, and were substantially complete by October 2, 2001. The RA construction activities included site grading and waste relocation, modifications to the final cover system, installation of a dual leachate/landfill gas extraction and collection system, construction of a leachate loadout facility, and Site restoration activities.

Initial startup and maintenance of the landfill gas and leachate management systems began on April 3, 2001, and continued through April 2002. A summary report of these activities was submitted to the USEPA on April 10, 2002. Subsequent OM&M of the systems have been documented in the semi-annual and annual reports that have been submitted to the USEPA.

## 1.1.3 Landfill Gas-to-Energy System

The landfill gas management system at the Site was modified in 2003 to include a pipeline and an off-site landfill gas-to-energy system to beneficially use landfill gas collected at the HOD Landfill. The gas-to-energy system was owned and operated by Community High School District No. 117 (District No. 117). System startup and balancing activities occurred during the third and fourth quarters of 2003. A Landfill Gas System Modification Report, which includes information regarding modifications to the landfill gas management system and appurtenances to accommodate the landfill gas-to-energy system, was included in OM&M Progress Report No. 9 (first quarter of 2004) dated July 2004 (RMT, 2004).

The gas-to-energy system was operated independently from the landfill gas management system at the Site. In June 2013, District No. 117 decided to take the gas-to-energy system offline. The costs associated with additional system upgrades needed to keep the system operating efficiently reportedly outweighed the benefits of using the gas collected at the Site. The gas-to-energy system was decommissioned in 2014. Landfill gas continues to be combusted at a utility flare at the Site.

## 1.1.4 Site Use

In 2003, the USEPA issued a Ready for Reuse Determination for the Site. This led to a final end use plan that included development of a portion of the Site to support a variety of recreational activities. The recreational area includes a playground, soccer, field hockey and baseball fields, and additional facilities for District No. 117 Athletics.

From 2004 to 2007, portions of the landfill received additional soil and grading to support the development and implementation of the final end use plan. During this period, tennis courts, softball and soccer practice fields, a paved parking area, and an access road were installed. A competition field hockey field, including open space directly east of the field hockey field, and portions of the western and northern slopes were graded and seeded. A concession stand and a water pump house building (pump house) were constructed on the western portion of the Site. Access roads and walking paths, a Site water supply pipe, surface water drainage piping and other surface water drainage features (including catch basins, manholes, and culverts), irrigation, piping, and electrical conduit and transformers were also installed in association with that development.

## 1.1.5 Institutional Controls

The Site is currently utilized by the public in accordance with the plan; thus, maintenance or monitoring of Site access controls (i.e., perimeter fencing or signage) is not required. Groundwater use in the vicinity of the Site is prohibited by a number of ordinances or regulations imposed by the Village of Antioch, Lake County, and the State of Illinois. The Antioch, Illinois Village Code (Title 8, Chapter 1- Combined Waterworks and Sewerage System, Sections 8-1-1 and 8-2-3-1) requires that all buildings be connected to the waterworks and sewerage system. Antioch Water Works and Sewage Ordinance Sections 50.008, 52.009, and 52.011 also require that buildings on properties within the Village limits, that abut the public water works and sewerage system, be connected to the municipal water supply system. Furthermore, an ordinance prohibits the installation of private wells within Village limits. The Lake County Code, Chapter 170; Well and Water Regulations specify requirements for well permitting in the event that a municipal supply connection does not exist, including sampling of all new wells by the Health Officer. The Illinois Administrative Code Part 620, Section 920.50 specifies restrictions for locating wells near sources of contamination, and Section 920.130 Water Well Permit Requirements, specifies that permit applications will be denied when the aquifer contains contamination that exceeds Class I groundwater standards.

WMII submitted supplemental information in support of placement of deed restrictions (i.e., Environmental Covenants) on the parcels which it owns at the Site to USEPA by correspondence dated May 31, 2019. A draft Environmental Covenant for the parcels owned by the Village of Antioch was also submitted to USEPA in 2019. Given the current approved end use, where the public is allowed access to the majority of the Site, the Environmental Covenants and administrative controls described above are expected to be the primary institutional controls at the Site.

#### 1.2 PURPOSE AND SCOPE

OM&M and performance monitoring of the source control remedial components is part of the RA for the Site. The requirements associated with maintenance of the landfill cap and operation and monitoring of the leachate/landfill gas collection system are identified in the Final O&M Plan (RMT, 2001) and the PSVP. The data associated with these activities are generally documented in periodic inspection and maintenance reports.

The PSVP also includes the Quality Assurance Project Plan (QAPP) (RMT, 2001) and the Field Sampling and Analysis Plan (RMT, 2001) to support sample collection and analysis in association with performance monitoring at the Site. These documents are amended from time to time; the latest revisions to these documents are dated April 2008. The current environmental (groundwater, surface water, landfill gas, and leachate) monitoring program, approved by the USEPA in a May 17. 2007, correspondence, is summarized in **Table 1**. As described therein, implementation of the environmental monitoring program generates data from analysis of samples collected from the identified media at different frequencies throughout the year. A preliminary analysis of the data, with regard to exceedances of established screening criteria from each semi-annual monitoring period, is submitted to the USEPA prior to submittal of the annual report. The preliminary data analysis (i.e., Exceedance Report) for the first 2019 semi-annual reporting period was dated July 5, 2019. The exceedance report for the second 2019 semi-annual reporting period was dated January 6, 2020. Table 1 was subsequently revised to include units of the identified compounds (i.e., µg/L = micrograms per liter or mg/L = milligrams per liter) and submitted to USEPA by transmittal letter dated January 14, 2020. This Report is presented to transmit the OM&M data generated during the second semi-annual period in 2019 (July to December 2019), which is the 46th reporting period following completion of the interim operation period.

The scope of this Report includes the following:

- Identification of Site inspection and maintenance activities performed during the second 2019 semi-annual reporting period.
- Transmittal of environmental monitoring data generated during the second 2019 semi-annual reporting period.
- Evaluation of data quality from the second 2019 semi-annual reporting period.
- Analysis of the environmental data generated in 2019 (i.e., first and second semi-annual periods).
- Recommendations regarding future OM&M activities at the Site.

The analysis of the 2019 data includes an evaluation of groundwater, surface water, and leachate results from 2019 that exceed the site-wide protection standards. Groundwater results from this period that exceed the identified standards are also compared with historical data, where warranted, to further evaluate the significance of these results. Also included is an assessment of the groundwater results with regard to the effectiveness of natural attenuation of the contaminants of concern (COCs) at the Site.

## 2.0 SITE INSPECTION AND MAINTENANCE ACTIVITIES

Monthly Site inspections were performed during the second semi-annual 2019 reporting period by WMII personnel on July 22, August 22, September 26, October 18, November 12, and December 20, 2019. The Site inspections include an evaluation of the condition of the final cover system, access road, groundwater wells, gas probes, extraction wells, condensate sumps, extraction system piping, blower facility, flare, fencing, and signs. Observations are noted directly on the Facility Inspection Report form. The form allows the evaluator to note whether each component of the Site is "adequate" or "requires maintenance." If an item is marked as "requires maintenance," the item is evaluated and appropriate resources are scheduled in conjunction with ongoing scheduled (i.e., routine) maintenance activities or as a non-routine maintenance item to address the issue.

Copies of the monthly Facility Inspection Reports completed by WMII personnel during this reporting period are included in **Appendix A**. A summary of maintenance items performed in 2019 is provided in **Table 2**.

**Table 2** includes a variety of routine (i.e., scheduled) and non-routine maintenance items, to support continuing operation of the existing systems at the Site. The routine maintenance items include periodically adding to or changing fluids associated with the compressor, lubrication of the blower bearings, draining liquid from the flame arrestor, pump maintenance, equipment calibration, etc.

Routine maintenance in 2019 included the removal, cleaning, and reinstallation of 6 of the 35 air operated (i.e., pneumatic) pumps associated with the leachate collection system at the Site. Similar pump maintenance was performed at 15 of the 35 wells in 2018.

Non-routine maintenance activities in 2019 included:

- Replacement of the air pressure regulator for the pneumatic pump at landfill gas condensate sump CS4.
- A hardware component associated with the remote monitoring system was replaced in December 2019 after it was found to have been damaged. The component is utilized for network security and does not affect the operation of the remedial systems at the Site.
- Replacement of the air pressure regulator and cycle counter for the pneumatic pumps at leachate/landfill gas wells GW23 and GWF5.
- Replacement of the well heads at six leachate/landfill gas extraction wells/points.
- Inspection of 16 leachate/landfill gas extraction wells using a downhole camera.
- Replacement of the bearings and drive coupling for the blower.

The routine and non-routine maintenance activities were generally performed without significant disruption to the operation of the remedial systems at the Site. The bearings and drive coupling for the blower/flare were replaced after the blower bearings failed on August 30, 2019, thus normal operation of the blower/flare did not resume until September 6, 2019.

## 3.0 ENVIRONMENTAL MONITORING

#### 3.1 GENERAL INFORMATION

Landfill gas, leachate, groundwater, and surface water quality were monitored during the second semi-annual 2019 reporting period at the Site, in accordance with the current environmental monitoring program that was approved by the USEPA in a correspondence dated May 17, 2007. That plan is summarized in **Table 1**.

The current environmental monitoring program was originally proposed in a submittal dated September 5, 2006. Review comments regarding the submittal were issued by the USEPA on October 12, 2006. WMII prepared a follow-up response to the review comments, which was submitted to the USEPA on February 21, 2007.

The environmental monitoring activities conducted at the Site are described in the following subsections.

## 3.2 LANDFILL GAS SYSTEM MONITORING

## 3.2.1 Third and Fourth Quarter Landfill Gas System Monitoring

During the second 2019 semi-annual period, landfill gas quality at the blower/flare station was monitored on a monthly basis by WMII personnel. The data from the monthly monitoring during this

period (July through December 2019) is included on the Facility Inspection Reports in **Appendix A**. The data from monthly sampling at the blower/flare in 2019 is summarized in **Table 3**.

The performance of the landfill gas extraction system is assessed by monitoring gas quality at the extraction wellheads on a quarterly basis. Monitoring at the gas extraction wellheads was performed during the second semi-annual 2019 period by WMII personnel on September 26 and October 18, 2019. Copies of the completed quarterly landfill gas/leachate monitoring forms for 2019 are included in **Appendix B**.

Another component of assessing system performance at the Site includes sampling of six perimeter landfill gas probes and three ambient air sampling points, located on the east side of the property. The approved monitoring program includes sampling of the perimeter gas probes and ambient air locations on an annual basis. During the 2019 reporting period, the gas probes and ambient air were sampled by WMII personnel on four occasions (March 28, May 14, September 26, and October 18, 2019).

Landfill gas quality was measured using field instrumentation (i.e., Landtec GEM 5000 or Envision meter) to identify concentrations (percent by volume) of methane (CH4), carbon dioxide (CO2), oxygen (O2), and nitrogen (i.e., balance gas) at the blower/flare, 33 dual leachate/gas extraction wells, 2 manholes, 6 landfill gas monitoring probes, and the 3 ambient air monitoring locations. Balance gas, interpreted as nitrogen, was calculated as the net remaining volume fraction after the other measured constituents (CH4, CO2, and O2) were accounted for. Pressure data was also collected using the identified field instrumentation at the blower/flare, manholes, gas probes, and gas wells. The monitoring locations are shown on **Figure 1**.

The data are reviewed and utilized as a basis for adjustments to the valves on the gas extraction points, if necessary, to balance the system. The goal of a "balanced system" is to maximize gas flow and maintain acceptable landfill gas quality. The gas flow at a well is determined by the ability of a particular well to produce gas and the vacuum applied to that well. The requirements for gas quality can vary depending on if the gas is used as a fuel (i.e., in a microturbine) or if it is flared. Use as a fuel is typically associated with higher methane concentrations (i.e., greater than 35 percent by volume) and lower oxygen levels (i.e., less than 5 percent by volume). Gas quality is less critical when flared. Gas well tuning must account for requirements regarding gas quality and also, the need to reduce the potential for gas migration and emissions from the landfill.

## 3.2.2 Evaluation of Landfill Gas System Monitoring Data

The landfill gas management system at the Site was modified in 2003 to include the landfill gas-to-energy system that was constructed to beneficially use landfill gas. In 2006 and 2007, a utility flare was installed adjacent to the enclosed flare that was originally constructed at the Site to combust the excess volume of gas that was available when the gas-to-energy system was operating. That gas-to-energy system was taken off-line in June 2013 and decommissioned in 2014.

During this reporting period, landfill gas continued to be withdrawn from the wells by vacuum created by the operation of a blower. The blower output (i.e., exhaust) is directed to the utility flare where a periodic electronic spark ignites the gas, so it is burned at the tip of the flare.

The monthly and quarterly field data regarding landfill gas quality and quantity is routinely reviewed. Adjustments are made to the extraction points to maximize landfill gas volume and quality, while maintaining oxygen concentrations at an acceptable level. Review of the monthly data from this reporting period indicates that landfill gas flow at the flare ranges from approximately 92 to

158 cubic feet per minute (cfm). The available (i.e., header) vacuum, generated by the blower operation, ranged from 38.6 to 59.6 inches of water during the 2019 reporting period.

Vacuum at the individual wells varies over time. The wells are typically operated under vacuum, ranging up to the available (i.e., header) vacuum. At the time of each of the quarterly monitoring events, vacuum was present at all of the 35 monitoring points. The vacuum was greater than 1 inch of water at all but two of the monitoring points (i.e., LP11, and MHW) in March, September, and October. Vacuum was greater than 1 inch at all of the monitoring points during the May monitoring event. The data indicates that the vacuum generated by the blower is adequately distributed throughout the header system (i.e., no blockages) and periodic wellfield tuning was successful in applying appropriate vacuum to the individual wells during this reporting period.

Methane concentrations at the 35 points where quarterly measurements were taken during this reporting period ranged up to 77.8 percent by volume (LP8, October 2019), but were generally less than 50 percent by volume at most of the extraction points. Oxygen concentrations at the extraction points ranged up to 20.9 percent by volume, which is consistent with the atmosphere. In those cases, the flow of landfill gas appears to have been restricted so that the overall gas quality at the flare was acceptable. The average oxygen concentration at the individual wells decreased from 10.8 percent by volume during the first quarter event to 8.5 percent by volume during the fourth quarter event, indicating that periodic wellfield tuning was effective.

Given the relatively low flows consistently noted at the gas wells during prior sampling events (less than 10 cfm), and the lack of accuracy using orifice plates in low flow measurements, the orifice plates were removed from most of the extraction points to optimize the system operation. The temperature data are consistent with the low gas flow from the wells, in that there are no areas of the landfill where the temperature is elevated.

With regard to the perimeter probes, methane was not identified at any of the gas probes (GP3A, GP4A, GP5A, GP6, GP7, and GP8) during the routine quarterly monitoring events. In the case that methane would be detected at a perimeter probe, the landfill gas technician would evaluate the operation of the gas extraction system and make adjustments to increase the vacuum in nearby wells to reduce the methane concentration observed in perimeter probes.

Monitoring of the ambient air points (AA1, AA2, and AA3) was performed during the quarterly monitoring events. No methane was identified at any of the ambient air locations during this reporting period.

The data indicate that the landfill gas control system was operated effectively and in accordance with the design during this reporting period. Available vacuum data does not indicate any blockage(s) in the header system. The downtime from August 30 to September 6, 2019, associated with the blower bearing failure, did not materially affect the performance of the system. The operation of the landfill gas collection system is expected to continue in 2020. Specific recommendations for operational improvements are included in **Section 6.0** of this Report.

## 3.3 LEACHATE COLLECTION SYSTEM MONITORING

The majority of the leachate extraction points were designed and installed as dual extraction wells, in that landfill gas and leachate are collected at each of the 33 vertical wells installed in the waste mass. Leachate is pumped from the wells using pneumatic pumps. The pumps were originally set at an elevation within the well to achieve an inward gradient. The pumps are approximately 3 feet in length and float actuated, in that the pump rate and associated flow is determined by the depth of liquid above the top of the pump. Leachate is also pumped from two manholes, MHE and MHW, that

are connected to horizontal collection pipes located on either side of the clay cutoff wall that divides the east and west areas of the landfill. The operation of the pneumatic pumps is influenced by the pressure (i.e., vacuum) at the individual extraction points. Specifically, the maximum drawdown (i.e., liquid level above the top of the pump) at pumping locations under vacuum will be less due to pressure equalization of the pump exhaust.

Leachate pumped from the collection manholes and extraction wells flow through a 2-inch perimeter force main into a 30,000-gallon underground storage tank that is located in the southwest corner of the landfill. The leachate from the storage tank is pumped into tank trucks when necessary and transported by PATS Service, Inc. (PATS) of New Munster, Wisconsin, to the City of Burlington, Wisconsin Wastewater Treatment Plant. The tank level is monitored by a transducer integrated with an electronic notification system at the Site. The system provides notice by email when the tank level is such that leachate removal (i.e., pumping) is necessary.

## 3.3.1 Second Semi-annual Leachate Collection System Monitoring

The volume of leachate extracted and transported by PATS from the Site for off-site treatment and disposal at the City of Burlington, Wisconsin Wastewater Treatment Plant, during the second semi-annual 2019 reporting period was approximately 513,500 gallons, or an average of approximately 2,791 gallons per day. The volume is based on the quantities identified on the individual load tickets. During the first semi-annual reporting period, a total of approximately 288,000 gallons of leachate were removed (1,591 gallons per day); thus, the total leachate volume extracted from the Site in 2019 was approximately 801,500 gallons. A summary of the monthly leachate volumes transported by PATS in 2019 is included as **Appendix C**.

The volume of leachate extracted in 2019 (801,500 gallons) is consistent with the past pumping volumes. The average leachate volume removed during the period of 2001 to 2012 was approximately 1,584,000 gallons per year; the annual volumes ranged from 1,282,500 to 2,221,500 gallons. Leachate extraction volumes in 2013 and 2014 were relatively lower, 565,500 and 435,500 gallons in 2013 and 2014, respectively, due to the force main blockages. After sections of the force main were replaced, and other improvements to the leachate collection system were completed in 2015, the leachate volume removed in 2015, 2016, 2017, and 2018 was 1,219,500, 1,162,500, 1,065,500, and 821,500 gallons, respectively.

Leachate volumes from individual extraction points may be estimated from the pump cycle counter readings that are taken on a quarterly basis. The pump cycle readings obtained by WMII personnel during this period are included on the field sheets in **Appendix B**. As previously determined during the interim OM&M period, one cycle of each pump was approximately equal to 0.115 gallon (0.435 liter per cycle) (RMT, 2002). The pump cycle rate is variable because of the changing conditions (i.e. liquid level above the pump). Volume calculated from the pump cycle numbers is not expected to correlate exactly with the volume of leachate hauled off site, but may give an indication if the pump is not operating, or the relative volumes of liquid being removed from various areas of the landfill. The locations of the dual gas/leachate extraction wells are shown on **Figure 1**.

Based on the total cycles recorded at the leachate pumps (3,749,570 cycles), a total of 431,200 gallons of leachate was pumped from the extraction points during the period of October 16, 2018, to October 25, 2019, or an average of 1,181 gallons per day. The cycle counter readings at each leachate pump are summarized in **Table 4**. This volume estimate is lower than the total leachate volume indicated by the load tickets.

To further evaluate the data from the cycle counter readings, several hypothetical pumping scenarios are presented. To produce a total of 2,500 gallons per day, each of the 35 leachate pumps would have to remove, on average, 72 gallons per day (626 cycles) or record 228,490 cycles in a 365 day (i.e., 1 year) period. Continuous operation of the pump, at a cycle rate of 1 per minute, would be indicated by 525,600 cycles. Thus, if sufficient liquid was present, consistent increases over time and annual differences in cycle counter readings between approximately 200,000 and 500,000 would be expected. None of the values in **Table 4** met those criteria. Even where the cycle counters were replaced during this reporting period (i.e., GW23 and GWF5), the readings do not indicate continuous pump operation despite the liquid level being above the target elevation.

It should be noted that the pump operation is not dependent on the cycle counter, in that a malfunction of the counter will not stop the operation of the pump. The pneumatic pumps installed in the wells are float actuated, in that they only operate when liquid levels are present above the top of the pump. The pumps are approximately 3 feet in length and were initially installed to an elevation projected to achieve inward gradients at the Site. Since the wells were not installed specifically to achieve the target leachate level, there are some cases where the target elevation cannot be achieved. The leachate pumps are maintained on both as an as-needed and periodic basis. As-needed maintenance is performed when there is an issue noted (i.e., air leak), or evidence that the pump is not functioning (i.e., no change in cycle counter reading, reduced gas flow, and/or observed failure to cycle). In addition to as-needed maintenance, routine pump maintenance is performed periodically. As shown In **Table 2**, the pneumatic pumps at 6 of the 35 leachate extraction points GW28, GW29, GW29, GW24, GW23, and GWF5 were removed, cleaned, repaired as needed, and reinstalled during the 2019 reporting period.

Quarterly liquid level measurements were taken at the individual extraction well locations during the second semi-annual reporting period on September 28 and October 25, 2019. The liquid levels were measured in March, May, and September after the leachate pumping system was shut down for a minimum of approximately 24 hours. The liquid levels were measured in October after the leachate pumping system was shut down for a minimum of approximately 7 days. Summaries of the quarterly leachate elevations in 2019 are presented in **Tables 5, 6, 7**, and **8**.

Individual well productivity and drawdown responses are likely to vary widely from well to well because of the heterogeneous nature of the landfill, including the heterogeneity of refuse (i.e., waste type, compaction, degree of decomposition, gas content, and temperature), the presence of daily and intermediate covers, the effect of landfill gas pressure buildup, and landfill geometry (i.e., buried berms, ridges, and trench disposal geometry). There are other factors that could also affect liquid level measurements at individual wells related to well construction (i.e., surface seal integrity) or location (i.e., vaults and site irrigation).

A sample was collected from the leachate holding tank on November 4, 2019. The results from laboratory analysis of that sample are included in **Appendix D** and as an electronic data deliverable (EDD) on the CD in **Appendix I**. The results from analysis of the leachate sample collected as part of the first semi-annual event in 2019 are also included in **Appendix D**.

Leachate extraction from the wells and quarterly monitoring of leachate levels will continue in 2020. Recommendations with regard to the leachate extraction program are included in **Section 6.0** of this Report.

## 3.3.2 Evaluation of Leachate Collection System Data

Although there is no established criteria with regard to leachate volume collected, the leachate elevations at the individual wells are assessed in accordance with the criteria established in the

April 14, 1999, USEPA Statement of Work associated with the UAO for the Site; in that the active leachate extraction system was to be designed to create an inward hydraulic gradient, with regard to the elevation of groundwater in the surficial sand and gravel aquifer in the vicinity of the Site, within 12 years from the start of the system operation.

The basis for assessing the creation of inward gradients is a comparison of shallow groundwater level measurements from five southern water table monitoring wells (W-05S, W-06S, PZ-03U, PZ-04U, and PZ-05U) against measurements of non-pumping head values in 15 of the 35 leachate extraction points (GWF5, GW20, GW21, GW22, GW23, GW24, GW25R, GW26, GW27, GW28, GW29, GW30, LP1R, LP3, and LP10) at the Site. The 15 extraction wells are located on the west, south, and east perimeter of the waste at the Site. Non-pumping head values are defined as measurement of leachate head levels after the pumps have been turned off for a period of time ranging from 1 to 7 days.

An elevation of 761 feet above mean sea level (amsl) was set as the goal for the individual leachate extraction points, with regard to a target head maintenance level. The data from individual points (i.e., water table or leachate extraction wells) was expected to be utilized to calculate a mathematical average to assess the progress toward or achievement of that goal.

Leachate quality is evaluated by screening the data using the wastewater effluent standards for leachate, as identified in Table 4 of the PSVP.

## 3.3.2.1 Leachate Head Elevation

**Tables 5**, 6, 7, and 8 include a comparison of the quarterly leachate head level measurements taken during this reporting period to the target leachate level (761 feet amsl). The data is presented using the elevation survey completed on September 18, 2017, by R.E. Allen and Associates, LTD of Grayslake, Illinois. The data from this reporting period shows that the target level was consistently achieved at only three extraction points (GW16, GW21, and GW32) during each of the four quarterly monitoring events during the 2019 reporting period. Only GW21 is located along the perimeter of the waste at the site, thus an average leachate elevation at the perimeter wells is not calculated. An isocontour map showing the difference in leachate elevation to the target elevation (761 feet amsl), using the fourth quarter (October 2019) data, is presented as **Figure 2**. **Figure 2** shows the variability in leachate levels across the Site.

The long-term performance of the leachate extraction pumps, as compared to the initial elevations when the pumps were installed (January 2001), is presented in **Table 9**. This evaluation indicates that although the leachate elevations in October 2019 are lower than the initial levels at 14 of the 35 monitoring locations, the levels remain above the target elevation at all but three of the leachate extraction points. Of the 15 perimeter extraction wells used to evaluate the leachate elevation with regard to inward gradients, the liquid level in October 2019 was lower than the initial level (January 2001) at nine of those points. The levels remain above the target elevation at 14 of the 15 perimeter extraction points.

Pump maintenance does not appear to be a significant factor in achieving the target leachate levels. As previously described, routine maintenance was performed on 15 pumps in 2018, and 6 of the 35 pneumatic pumps associated with the leachate control system at the Site in 2019. If pump maintenance were an issue, the liquid levels at the wells where the pumps were maintained in 2019 would be expected to decrease over time, especially within 6 to 12 months after maintenance. Liquid levels were lower during the October event compared to the September event at all six of the pumps where maintenance was performed in August 2019. However, leachate elevations were lower during the May monitoring event, prior to maintenance, at four of those six extraction points. These

data suggest that the identified leachate levels may be affected by other factors, other than pump maintenance/performance, and may not be representative of actual leachate elevations in the waste.

As summarized on **Table 9a**, the current assessment indicates that the bottom of the well is at an elevation (i.e., greater than 756 feet amsl) that is not likely low enough to allow the current pumps to achieve the target liquid elevation (761 feet amsl) at 14 of the 35 monitoring points, including 9 of the 15 perimeter wells. The 5-foot difference takes into account the pump length, approximate 1-foot separation between the bottom of pump and well, and operation of the pump under vacuum.

In accordance with a recommendation in the 2018 Annual Report, WMII staff inspected 16 of the 35 dual extraction wells using a downhole video camera on May 14 and 15, 2019, to assess the potential for sediment accumulation. Seven of the 16 wells inspected were perimeter wells. The results from the video examination of the extraction wells showed that neither sediment accumulation within the well, or clogging of the screened portion of the well, was occurring at the Site; thus, utilizing a high pressure water spray (i.e., jet) and suction was not required to clean the extraction wells.

The downhole video did identify obstructions at four extraction wells, all of which are located within the interior of the waste mass at the Site. The obstructions may impact the ability to perform pump maintenance, and associated liquid removal, but do not appear to affect landfill gas collection

## 3.3.2.2 Leachate Transportation and Off-Site Disposal

As shown in the table in **Appendix C**, a total of 801,500 gallons, or an average of 2,196 gallons per day, of leachate were extracted and transported from the Site during the 2019 reporting period. The leachate is pumped from a holding tank by PATS and transported to the City of Burlington, Wisconsin Waste Water Treatment Plant, for disposal. The volume is based on the leachate haul records provided by PATS. This reported leachate volume is more accurate than the volume estimated from the cycle counter readings recorded at specific leachate pumps. As shown on the summary in **Appendix C**, approximately 25,078,801 gallons of leachate have been removed from the landfill since 2001. The local annual precipitation over that period is also included for reference in **Appendix C**.

## 3.3.2.3 Leachate Quality

During this reporting period, leachate samples were collected from the holding tank on May 6 and November 4, 2019. The samples were analyzed for the parameters identified in the current environmental monitoring program that was approved by the USEPA in a May 17, 2007 correspondence. Those parameters are summarized in Table 6 of the Field Sampling and Analysis Plan (FSAP). The analytical results from both semi-annual samples collected during 2019 are evaluated with regard to the Site wide protection standards for leachate identified in Table 4 of the PSVP. That evaluation is presented in **Table 10**. A summary of the leachate results from 2019 is provided in **Appendix D**. EDD files of the results and copies of the laboratory reports from the second semi-annual period in 2019 are included on a CD in **Appendix I**.

As shown in **Table 10**, there were two compounds (i.e., iron and total suspended solids [TSS]) identified at concentrations in one or both of the leachate samples collected during this reporting period that exceeded the effluent standards.

The ratio of biological oxygen demand (BOD) to chemical oxygen demand (COD) is approximately 0.04. The ratio, which is consistent in the May and November data, is indicative of stable waste. The individual BOD and COD results are typical of mature leachate.

Consistent with the analysis of prior samples, chlorinated organics (i.e., tetrachloroethylene, trichloroethylene, cis-1,2 dichloroethene, or vinyl chloride) were not identified at concentrations above reporting limits in analysis of the leachate samples collected in 2019.

#### 3.4 GROUNDWATER MONITORING

Groundwater sampling and analysis was performed in accordance with the environmental (groundwater, surface water, landfill gas, and leachate) monitoring program that was approved by the USEPA in a May 17, 2007 correspondence. The approved current groundwater sampling program is summarized in **Table 1**.

This Report presents an evaluation of the data from this second semi-annual 2019 reporting period. In addition, the groundwater monitoring data from both sampling events in 2019 is evaluated with regard to established site-wide groundwater protection criteria, flow, and the effectiveness of natural attenuation for the COC at the Site. The evaluation focuses on the two groundwater zones monitored at the Site: the shallow, unconfined sand and gravel aquifer that is present only near the southern and western edges of the landfill; and the confined, deep sand and gravel aquifer (DSGA) that underlies the entire Site. Those two groundwater zones are separated in the vicinity of the Site by a thick layer of fine grained soil (i.e., clay-rich diamict). A detailed description of groundwater occurrence and flow at the Site is provided in a number of previous reports including the predesign investigation (RMT, 2000).

## 3.4.1 Groundwater Level Measurements

## 3.4.1.1 Second Semi-annual Monitoring 2019

Water levels were measured by personnel from Environmental Monitoring and Technologies, Inc. (EMT), of Morton Grove, Illinois. Groundwater elevations were calculated from depth to water measurements at 30 monitoring wells taken on May 6, 2019, and November 4, 2019. The monitoring well locations are shown on **Figure 1**. The depth to water measurements and groundwater elevations are summarized in **Table 11** (May 2019) and **Table 12** (November 2019).

## 3.4.1.2 Water Table Wells

During the 2019 semi-annual sampling events, depth to water measurements were recorded at 15 monitoring wells screened in the shallow sand and gravel unit. Groundwater elevations at these wells (i.e., shallow water table wells) are consistent within this reporting period and with the data collected during prior sampling events. Review of groundwater elevations at wells located in the shallow unconfined sand and gravel zone indicates that horizontal gradients are relatively flat across the Site, which is consistent with a hydraulic connection to local surface water features. The difference in groundwater elevation across the Site, as identified by the elevations at wells G-14S and US-03S, varied by approximately 4.0 feet in May and 3.0 feet in November.

## 3.4.1.3 Deep Sand and Gravel Aquifer

Potentiometric surface maps showing groundwater elevations and an interpretation of flow direction in the DSGA, at the time of the semi-annual monitoring events in May 2019 and October 2019, are provided as **Figures 3** and **4**, respectively.

Groundwater elevations at the wells in the DSGA are generally consistent within this reporting period and with the data collected from prior measurements at the Site monitoring wells. Potentiometric flow maps, **Figures 3** and **4**, developed from depth to groundwater measurements collected as part of the semi-annual groundwater sampling events, indicate flow toward the center of the Site in both May and November 2019. The groundwater elevation was generally 1 to 2 feet higher at each of the monitoring wells in November 2019. The largest change in elevation at a single well was observed at US-04D, where the elevation was approximately 2 feet higher in November (735.74 feet amsl) than in May (733.76 feet amsl). The overall difference in groundwater elevations in the DSGA across the Site was approximately 1.6 feet in May (i.e., from wells PZ-01 to US-03D) and 0.9 feet in November (i.e., from wells R-01D to US-03D). The general groundwater flow patterns in the DSGA are consistent with prior interpretations. The noted variations in groundwater elevations in the DSGA, between the May and November data, do not appear to materially affect the local groundwater flow patterns.

As reported in the Predesign Investigation (PDI) Groundwater Report (RMT, 2000), the potentiometric surface in the DSGA was found to be strongly influenced by the confined conditions in the DSGA and the effects of the variable schedule of pumping from the Village of Antioch municipal wells (VW-03 and VW-05) to the west and the south of the landfill. The Village of Antioch reportedly brought three new pumping wells on line in 2008. Wells VW-03 and VW-05 are approximately 1,000 feet to the west of the site and 1,600 southwest of the site, respectively.

Records provided by the Village of Antioch indicate that approximately 64 million gallons of water was pumped from VW-03 well in 2019. The well was operated for approximately 7 hours per day at a pumping rate of 410 gallons per minute (gpm). The total pumping volumes for VW-03 in 2015, 2016, 2017, and 2018 were reportedly 11,168,000, 21,830,000, and 23,489,000, 80,193,000 gallons, respectively.

The identified groundwater flow patterns in May and October 2019 are consistent with prior interpretations that indicate a relatively flat hydraulic gradient (i.e., slow groundwater flow velocity) and a confined aquifer. The primary recharge area for the DSGA is approximately 5 miles west of the Site, in the Fox River Valley, where the clay-rich diamict is not present. As such, withdrawal from pumping wells (i.e., VW-03 or VW-05) does not significantly affect the water levels at individual monitoring points (i.e., wells), but is likely a component of the slight fluctuations in water levels in the DSGA. Thus, the direction of groundwater flow in the DSGA may change over time and is subject to interpretation of available data. The semi-annual groundwater elevations since 2011 at two monitoring wells located west of the site in the DSGA are shown on **Table 12a**. The groundwater elevation at US-03D is generally higher than at US-04D, indicating an easterly flow component in the DSGA toward the waste mass at the Site, but more of the recent measurements indicate a potential westerly component of flow. This potential westerly component of flow could be related to the increased recent pumping at VW-03, or lower recharge in the DSGA from the west.

# 3.4.2 Groundwater Sampling

## 3.4.2.1 Second Semi-annual Event 2019

The second semi-annual groundwater sampling event in 2019 was performed by EMT. Laboratory analysis of samples was performed by Eurofins TestAmerica, Inc. (TA) of Amherst, New York. The samples were analyzed for the parameters identified in the approved groundwater monitoring program.

Fifteen groundwater monitoring wells and a Village of Antioch water supply well (i.e., VW-03) were sampled during the period of November 4 to 6, 2019. The results from analysis of samples collected

during this period are included in **Appendix E**. EDD files of the results and copies of the laboratory reports from the second semi-annual period in 2019 are included on a CD in **Appendix I**. The EDD includes field data (i.e., measurements taken or observations made in the field) in an electronic format.

## 3.4.2.2 Annual Groundwater Data Evaluation

Groundwater analytical results from the first semi-annual monitoring event in 2019 were provided in the report entitled Operations, Maintenance, and Monitoring Semi-annual Report, January through June 2019, Report No. 45 dated April 2020 that was prepared by SCS.

The data from the second semi-annual 2019 reporting period were screened with regard to the site wide protection standards established for the Site; the results of that screening were transmitted to USEPA in documents dated January 6, 2020, and January 14, 2020.

This Report includes a summary and evaluation of the groundwater analytical results from both 2019 semi-annual monitoring events and a comparison of 2019 results to historical data for the Site, where warranted. The list of parameters, for which the samples were analyzed, is summarized in Table 1 of the FSAP. The analytical results from both semi-annual samples collected during 2019 were evaluated with regard to the site-wide protection standards (Table 1 of the PSVP) for groundwater. A summary of the data from 2019 is provided in **Appendix E**.

Data quality is evaluated by review of the information included in the laboratory analytical reports from the second semi-annual 2019 reporting period. Data reproducibility is assessed by comparison of results from the duplicate samples collected at one surface water point (SW-01) and two groundwater monitoring wells (US-06S and US-04D) during this period. Finally, an interpretation of specific analytical results from 2019 in the DSGA is provided in **Subsection 3.4.3** in support of the annual evaluation of the selected remedy for groundwater at this Site, monitored natural attenuation (MNA).

Exceedance of a site-wide groundwater protection standard, as defined in the PSVP (RMT, 2008), was reported in data from analysis of samples collected from 7 of the 15 groundwater points sampled in 2019. There were no exceedances in the data from analysis of the samples from the Village of Antioch well (VW-03). Five of the wells are located in the upper sand and gravel (G-102, PZ-03U, PZ-04U, US-04S, and W-06S), and two are located in the DSGA (US-03D and W-08D). The locations of these wells are shown on **Figure 1**. A summary of the groundwater exceedances reported in the data from 2019 is provided in **Table 13**.

# 3.4.2.3 Exceedances of Site-Wide Groundwater Protection Standards – Inorganic Parameters

As shown in **Table 13**, the results from analysis of samples collected in 2019 from seven groundwater monitoring wells exceeded the site-wide groundwater protection standards (i.e., screening criteria) for one or more inorganic compounds including chloride, iron, manganese, sulfate, and total dissolved solids (TDS). The results from analysis of samples from four wells (G-102, US-03D, US-04S, and W-06S) exceeded the site-wide groundwater protection standard for dissolved chloride (i.e., 200 milligrams per liter [mg/L]). The results from analysis of samples from three wells (PZ-04U, W-06S, and W-08D) exceeded the site-wide groundwater protection standard for manganese (i.e., 150 micrograms per liter [ $\mu$ g/L]). The results from analysis of the sample from one well (W-06S) exceeded the site-wide groundwater protection standard for TDS (i.e., 1,200 mg/L) and sulfate (i.e., 400 mg/L). The results from analysis of the samples from three wells (W-06S, PZ-03U, and G-102) exceeded the site-wide groundwater protection standard for iron (i.e., 5 mg/L).

With regard to inorganic parameters, the greatest number of exceedances (i.e., five) is associated with the analysis of the samples collected from well W-06S. W-06S is a shallow well, where groundwater samples are collected within approximately 15 feet of the ground surface. The well is located in an area where surface water is known to pond seasonally. These factors could contribute to the variation in concentration of sulfate noted in the results from the two sampling events in 2019. The concentrations of other inorganic parameters (i.e., chloride, iron, and manganese) at this well are more consistent in 2019. The concentrations of inorganic parameters in excess of the screening criteria at the other wells identified in **Table 13** are generally consistent in 2019 and with results from analysis of past samples from the identified sampling locations.

Relatively high concentrations of dissolved manganese and/or iron may be an indicator of reducing conditions in groundwater. Elevated concentrations of these metals are commonly found in groundwater where significant dissolved organic carbon is present. As available oxygen is consumed by the oxidation of organic carbon, reducing conditions develop and the solubility of iron and manganese increases. In addition, under these conditions, manganese and iron minerals and coatings on sand grains are used as terminal electron receptors by bacteria, resulting in the production of dissolved iron and manganese in groundwater.

The four wells (G-102, US-03D, US-04S, and W-06S) where chloride was identified at concentrations that exceeded the site-wide groundwater protection standard are all located in the southwestern area of the Site. These were the same wells where exceedances of the site-wide groundwater protection standard for chloride were reported in previous reporting periods. Well US-03D is the only monitoring well screened in the DSGA where the chloride concentration from this reporting period exceeded the site-wide groundwater protection standard. Chloride has been reported at consistent concentrations in excess of the screening criteria in prior samples collected from US-03D. Three of these wells (G-102, US-04S, and W-06S) are shallow wells, where the screened interval is less than 25 feet below ground surface. Paved public roadways are present in this area. Salt is applied seasonally to these roadways to control ice and snow, thus elevated chloride concentrations in shallow groundwater and surface water are expected.

In summary, the concentrations of inorganic compounds that exceeded established site-wide groundwater protection standards at the Site are generally consistent with previous results. The locations where concentrations of inorganic parameters are present above the screening criteria in groundwater are well established and stable.

# 3.4.2.4 Exceedances of Site-Wide Groundwater Protection Standards – Organic Parameters

As shown in **Table 13**, results from analysis of samples collected from two wells (i.e., US-03D and W-06S) during this reporting period exceeded a site-wide groundwater protection standard for one or more organic compounds. A total of two volatile organic compounds (VOCs), cis-1,2 dichloroethene and vinyl chloride, were reported at concentrations above their respective site-wide groundwater protection standards (i.e., screening criteria), in analysis of samples collected in 2019.

Vinyl chloride was reported at concentrations of 66  $\mu$ g/L and 69  $\mu$ g/L in analysis of samples collected from monitoring well US-03D in May and November 2019, respectively. The concentrations exceed the screening criteria of 2  $\mu$ g/L. Vinyl chloride was also reported from laboratory analysis of one of the two semi-annual samples from W-06S in 2019. The result from analysis of the sample collected in May (7.3  $\mu$ g/L) was not confirmed in analysis of the subsequent sample in November 2019 (less than 3.6  $\mu$ g/L).

The concentration of cis-1,2 dichloroethene also exceeded the site-wide groundwater protection standard (i.e.,  $70~\mu g/L$ ) in analysis of samples from monitoring well US-03D during both semi-annual sampling events in 2019. The concentration of cis-1,2 dichloroethene reported from analysis of samples collected as part of the first and second semi-annual sampling events was 290  $\mu g/L$  and 260  $\mu g/L$ , respectively.

The concentrations of cis-1,2 dichloroethene and vinyl chloride from this reporting period are consistent with those from analysis of prior samples from well US-03D.

In summary, there are only three organic compounds (i.e., cis-1,2 dichloroethene, trans-1,2 dichloroethene, and vinyl chloride) consistently quantified in laboratory analysis of groundwater samples collected from one well (i.e., US-03D) in the vicinity of the Site. US-03D is located approximately 300 feet west of the waste mass of the Site and is screened approximately 80 feet below ground surface (bgs) below the clay-rich diamict, in the DSGA. A summary of the concentrations of those organic compounds in samples from monitoring well US-03D over time is provided in **Table 14**.

While vinyl chloride, cis-1,2 dichloroethene, and trans-1,2 dichloroethene are typical products of the degradation by reductive dechlorination of more highly chlorinated ethenes including trichloroethylene (TCE) or tetrachloroethylene (PCE), there is no evidence of TCE or PCE in the leachate or in the samples from groundwater monitoring wells at the Site.

The current results are generally consistent with the data reported in the RI/FS (Montgomery Watson, 1997), the PDI groundwater report, and previous routine monitoring that has been conducted at the Site.

# 3.4.3 Evaluation of the Effectiveness of Monitored Natural Attenuation

The groundwater quality results from 2019 were also evaluated with regard to natural attenuation of chlorinated ethenes in the DSGA. Water quality in the DSGA was evaluated using the following three general lines of evidence that can be used to support demonstrations of natural attenuation, as described in USEPA guidance:

- Historical concentration trends that show decreasing contaminant mass and/or concentration over time.
- Hydrogeologic and geochemical data that demonstrate attenuative processes.
- Biological microcosm studies that directly demonstrate degradation.

As noted in the USEPA guidance document (USEPA, 1999), the first line of evidence is most conclusive, and natural attenuation processes may be sufficiently characterized without performing all three steps.

## 3.4.3.1 Historical Concentration Trends

Historically, monitoring well US-03D is the only location in the DSGA where VOCs have consistently been identified; thus, the focus of the monitored natural attenuation evaluation is on the groundwater in the DSGA in the vicinity of US-03D. The concentrations of the individual VOCs (i.e., cis-1,2 dichloroethene, trans-1,2 dichloroethene, and vinyl chloride) over time are summarized in **Table 14**. These compounds were also identified in analysis of past samples from well US-03D (May

1993 to present), including samples taken during the RI and PDI studies, and during the routine quarterly and semi-annual monitoring at the Site.

The concentrations of cis-1,2 dichloroethene, trans-1,2 dichloroethene, and vinyl chloride at US-03D are consistent from both semi-annual sampling events in 2019. When comparing the results of the two dichloroethene isomers (i.e., cis and trans) over time, it appears that the concentrations are stable or slowly decreasing over time. The vinyl chloride concentrations at US-03D appear to be stable to slightly increasing over time. The increase in vinyl chloride concentration over time is consistent with reductive dechlorination (i.e., natural attenuation) of the two dichloroethene isomers. Vinyl chloride can also have a slower degradation rate, and thus tends to accumulate. The stable to slightly decreasing concentrations of the two dichloroethene isomers, and the stable to slightly increasing concentrations of vinyl chloride, is evidence of the natural degradation of groundwater contaminants due to microbial activity.

## 3.4.3.2 Geochemical Data Evaluation

As described in previous reports, guidance for the use of MNA for the cleanup of contaminated soils and groundwater (USEPA, 1999) outlines a series of geochemical analyses that indirectly support the presence of biodegradation by anaerobic reductive dechlorination pathways. This guidance was originally used to develop the MNA monitoring program at the Site. That MNA program includes a number of these analyses, such as dissolved oxygen, nitrate, ferrous iron, manganese, sulfate, methane, redox potential, pH, alkalinity, and total organic carbon.

**Table 15** presents a comparison of the results for a variety of MNA parameters at well US-03D collected during the PDI (February and March 2000) and the 2019 monitoring events with the interpretation provided in the MNA guidance. This table indicates that conditions continue to be generally appropriate for anaerobic degradation of chlorinated ethenes present at well US-03D.

## 3.4.3.3 Microbial Activity

Microbial analyses are not currently a part of the current groundwater monitoring program at the Site, but based on the similarity of the results of most geochemical parameters at US-03D in 2019, compared to the values reported during the PDI, it is expected that microbial activity in the vicinity of this well remains elevated at levels consistent with those measured during the PDI and supportive of MNA.

## 3.4.3.4 Overall Evaluation of MNA Effectiveness

The analytical data from 2019 continues to support the conclusion that, based on the available information, MNA is providing an effective remedy to address the identified exceedances of the site-wide groundwater protection standards in the DSGA. This conclusion is supported by the concentrations of vinyl chloride and the dichloroethene compounds at US-03D discussed above, and the absence of VOCs at other wells in the DSGA in the vicinity of the landfill.

## 3.5 SURFACE WATER MONITORING

In accordance with the approved environmental monitoring program which is summarized in **Table 1**, surface water elevations were recorded and samples collected at two locations semi-annually at the Site. The surface water sampling locations are designated SW-01 and SW 02. SW-01 is located southeast of the landfill in an area that typically retains water. SW-02 is located northwest of the landfill, in Sequoit Creek. Of the two surface water sampling points, SW-01 is at a higher elevation.

There is a small drainage ditch that runs from east to west along the southern property boundary of the landfill. This drainage ditch collects runoff from the landfill and also conveys water from the vicinity of SW-01 to Sequoit Creek. The surface water sampling locations are positioned to assess background conditions (upstream location – SW-01) and potential impacts from the Site (downstream location – SW-02). The surface water sampling locations are shown on **Figure 1**.

## 3.5.1 Surface Water Level Measurements

Surface water elevations at the time of the first and second 2019 semi-annual sampling events are summarized in **Tables 16** and **17**, respectively. Surface water elevations are determined by observations using a staff gauge. The staff gauge scale (i.e., elevation) is oriented by survey using a known elevation point, and the water level (i.e., stream stage) is then read directly from the staff gauge. The surface water elevation at SW-01 and SW-02 were consistent with prior measurements at these locations.

## 3.5.2 Surface Water Sample Results

During the 2019 reporting period, surface water samples were collected at the upstream (SW-01) and downstream (SW-02) locations during the first and second semi-annual sampling events. The samples were analyzed for the list of parameters summarized in Table 4 of the FSAP. The analytical results from both semi-annual samples collected during 2019 are evaluated with regard to the General Use Water Quality Standards (Table 2 of the PSVP). There were no exceedances of the screening criteria in review of the results from analysis of the samples collected at SW-01 and SW-02 during the 2019 reporting period. The results from upstream and downstream sampling points are generally consistent and not indicative of impacts from the Site. A summary of the surface water results from 2019 is provided in **Appendix F**. EDD files and copies of the laboratory reports for the surface water results from the second semi-annual period in 2019 are included on the CD in **Appendix I**.

## 4.0 DATA QUALITY EVALUATION

Review of data quality associated with the first semi-annual 2019 monitoring event (May) was presented in the OM&M report for the first semi-annual monitoring period (January to June 2019). There were no significant data quality issues identified, thus that evaluation is not reiterated in this Report. The review of the environmental monitoring data from the second semi-annual sampling event in 2019, in accordance with the approved revisions to the QAPP, is presented in this section of the Report.

Data validation for this reporting period (i.e., second semi-annual 2019 sampling event) was accomplished by reviewing information provided by the laboratory (i.e., narratives, chain of custody forms, field information forms, etc.) to determine if there were any issues that would materially affect the data quality. Copies of the laboratory narratives from this period are included for reference in **Appendix H**. The review included assessment of sample handling procedures (i.e., holding times), data from analysis of samples collected to evaluate data quality from the Site (i.e., trip blanks and duplicates), and results from analysis of laboratory control samples (LCSs).

## 4.1 GENERAL INFORMATION

Samples from 15 groundwater monitoring wells, 2 surface water points, the leachate storage tank, and a water supply well (VW-03) were collected by EMT personnel in November 2019. The samples were shipped to TA for laboratory analysis for the parameters indicated in the approved monitoring plan. Upon arrival at TA, samples are checked, logged in, and an acknowledgement form is sent to

confirm that samples have reached the laboratory in good condition and within the required method hold time(s).

Review of the laboratory information associated with the data from the second semi-annual 2019 sampling period for the Site indicated that all samples were received intact and within temperature requirements, and in a timely manner such that analysis was expected to be performed within the required method hold time(s).

## 4.1.1 Field Samples – Quality Control

Trip blanks are created in the laboratory and accompany the sample containers from the lab, to the field, and back to the lab. The purpose of a trip blank is to assess whether samples were potentially exposed to contaminants during sampling or shipping procedures. TA provided data from analysis of three trip blanks for VOCs associated with the second semi-annual sampling event in 2019. No VOCs were quantified at concentrations above the reporting limits in analysis of the trip blanks associated with the second 2019 semi-annual sampling event.

Field or atmospheric blank samples are created in the field using the existing sampling equipment and a known clean water source, and accompany the samples to the laboratory. Analysis of field blanks can help assess potential impacts from sampling procedures and sampling equipment. One atmospheric blank was prepared and analyzed during the second semi-annual sampling event. No parameters were quantified at concentrations above the reporting limit in analysis of this atmospheric blank sample.

The laboratory analyzed one sample from the Site as a matrix spike/matrix spike duplicate (MS/MSD) as part of the second semi-annual sampling event. Recoveries of most parameters were within laboratory control limits. Parameters where results were outside of the laboratory control limits for the MS and/or MSD recovery from the second semi-annual sampling period (i.e., US-05D) include two general chemistry parameters (ammonia and dissolved cyanide). These parameters are not COCs at the Site. Potential issues with matrix inferences and/or quantification are not expected to be significant with regard to other parameters. The results from analysis of that sample are included in **Appendix G**.

As part of the second semi-annual sampling event, three duplicate samples were collected for laboratory analysis. Duplicate samples were collected at a surface water location (SW-01) and two groundwater monitoring wells (US-06S and US-04D) during the second semi-annual sampling event. The duplicate samples were submitted to the laboratory without the location identifier; thus, the samples are analyzed "blind." The reproducibility of the data is evaluated as the relative percent difference (RPD) of the two results. Since more variability is expected with lower results, the RPD is only discussed for analytes where the concentration is a minimum of five times greater than the reporting limit. The comparison of the reported analytes in the duplicate pairs during the second semi-annual sampling event is shown in **Table 18**. Using this criteria, the precision between the results is typically acceptable if the RPD is less than or equal to 15 percent. As shown in **Table 18**, the RPD for one parameter, total Kjeldahl nitrogen (TKN), from analysis of the sample at US-04D and its duplicate, was outside of the expected RPD range. The RPD for all parameters from analysis of the samples at US-06S and SW-01, and their duplicates, were within the expected RPD range; thus, the analyses of duplicate samples from this reporting period do not indicate any significant potential data quality issues.

The results from analysis of the quality control samples from this period are summarized in **Appendix G**.

## 4.2 LABORATORY QUALITY CONTROL

In addition to analysis of samples collected from the Site, the laboratory also employs a number of measures specified in the standard operating procedures (SOPs) for the various analytical methods to evaluate data quality. Typical quality control measures may include an Initial Calibration Validation (ICV), Continuing Calibration Validation (CCV), Instrument Performance Checks, and analysis of Method Blanks (MB), Laboratory Control Samples/Laboratory Control Sample Duplicates (LCS/LCSD) and storage blanks on a frequency specified in the standard method.

Laboratory MBs and trip blanks are analyzed to assess the potential of sample contamination from sample exposure to field and analytical procedures. A MB is taken through the same preparation and analytical steps as samples from the Site.

The results from analysis of laboratory control samples provide information about laboratory performance during sample preparation and measurement of performance on a clean water matrix. In cases where there is no preparation step (i.e., dissolved metals), the initial calibration verification standard is used as the LCS.

MS/MSD samples are also analyzed as a LCS. In this case, the MS/MSD sample is associated with the batch and may not be a sample from the Site. An MS is a sample that is developed using an investigative sample that is spiked with known concentrations of constituents representative of the method analytes, and carried through the appropriate steps of the analysis providing information about the effects of the sample matrix on the sample preparation and measurement performance.

The laboratory also assesses the reliability of data based on the recovery of laboratory surrogate spike samples. Laboratory performance for organic analysis is evaluated on individual samples and blanks by spiking the samples and blanks with surrogate compounds and then determining the surrogate spike recoveries.

In each of these cases, if the analysis of these samples falls outside of acceptable limits, the results associated with analysis of all samples within that batch are typically qualified by the laboratory. The potential data quality issues, which are the basis of the data qualifiers, are described in the laboratory narratives. A copy of the laboratory narratives associated with the data from the second semi-annual sampling event at the Site are included in **Appendix H**.

Although not specifically associated with data quality, it should be noted that TA diluted a number of samples prior to analysis. The reporting limits were adjusted appropriately. In those cases, the results from the original and diluted samples are reported. The result from the diluted sample typically includes a "D" or "DL" suffix. The laboratory also reanalyzed a number of samples for results that were inconsistent with recent results. In general, the reanalysis confirmed the initial result and the original results are reported with the data from this sampling period.

While the narratives describe a number of potential data quality issues, some of which resulted in qualified data, the identified issues are not unusual and most often unavoidable. The overall number of qualified results is relatively small, compared to the data set generated from analysis of samples collected during this sampling period, and generally involves parameters that are not COCs at the Site; thus, the qualified results are not expected to affect the overall usability of the data.

## 5.0 CONCLUSIONS

Methane was not identified at the ambient air locations or in the perimeter gas probes during this reporting period. The absence of methane, an indicator of landfill gas, at these locations confirms

that there is not a gas migration issue and that the landfill gas control system is operating as designed.

Landfill gas from the Site will continue to be collected using an on-site blower and combusted by a utility flare at the landfill.

Approximately 801,500 gallons of leachate was removed from the waste mass and disposed of off-site in 2019. Approximately 25 million gallons of leachate have been removed since January 2001 (1.32 million gallons per year, average).

Leachate levels within the Site, as determined by measurements at the dual extraction wells, remain above the target elevation (761 feet amsl) for an inward gradient at multiple monitoring points. Despite consistent leachate removal, the leachate heads remain above the target elevation. The data over time indicates that achieving the target level at most wells is not feasible or necessary. Achieving target leachate levels also does not appear to be necessary for stability of the capped waste mass at the Site; there were no leachate seeps or landfill gas issues noted during this reporting period.

During this reporting period, samples of groundwater, surface water, leachate, and landfill gas were collected and analyzed in accordance with the approved environmental monitoring program for the Site. The results from the second semi-annual sampling event were generally consistent with prior results. There were no significant data quality issues identified; thus, the data from this period is complete and acceptable for use.

Consistent with results from analysis of recent prior leachate samples, chlorinated ethenes (trichloroethylene, tetrachloroethylene, cis-1,2 dichloroethene, trans-1,2 dichloroethene, or vinyl chloride) were not identified at concentrations above reporting limits in analysis of the leachate samples collected in 2019. In general, as indicated by the individual BOD and COD results and BOD/COD ratio, the leachate quality is weak and is not likely a significant contribution to the contaminants in groundwater identified at concentrations above the approved site-wide groundwater protection criteria.

Groundwater elevation data from this reporting period are generally consistent with data from prior measurements at the Site. The data supports the interpretation that the DSGA acts as a confined aquifer in the vicinity of the Site.

VOCs (i.e., cis-1,2 dichloroethene and vinyl chloride) are only consistently reported at concentrations above the site-wide groundwater protection standards (i.e., screening criteria) in laboratory analysis of samples from one (i.e., US-03D) of the groundwater monitoring wells sampled during this reporting period in the DSGA. No VOCs were quantified in samples from a monitoring well (i.e., US-04D) located between the waste mass at the Site and US-03D.

Records provided by the Village of Antioch indicate that approximately 64 million gallons of water was pumped from the DSGA by a local municipal well (i.e., VW-03) in 2019. VW-03 is located approximately 1,000 feet west of the waste mass at the Site. The volume pumped in 2019 is lower than in 2018, when approximately 80 million gallons was pumped from VW-03, but still higher than volumes from the period of 2015 to 2017 when the volume pumped from VW-03 ranged from approximately 11 to 23 million gallons. Despite the apparent recent increase in pumping, there were no analytes identified from analysis of the two semi-annual samples during this reporting period that exceeded the established site-wide groundwater protection standards (i.e., screening criteria) for the Site, nor was there a notable impact on local groundwater elevations in the DSGA.

Review of groundwater data from this reporting period continues to support the conclusion that natural attenuation is occurring at the Site and, in particular, in the vicinity of well US-03D, to address VOC concentrations (i.e., chlorinated ethenes) in the DSGA. The concentrations of the identified VOCs are likely the result of degradation of higher chlorinated ethenes (i.e., trichloroethylene or tetrachloroethylene), which are not quantified in groundwater or leachate samples collected in accordance with the approved monitoring plan for the Site.

No site-related impacts were identified by the results from analysis of surface water samples collected during this reporting period.

## 6.0 RECOMMENDATIONS

Continue data collection in 2020 in accordance with the approved environmental monitoring plan including:

- Monthly landfill inspections will continue to be performed at the Site.
- Monthly landfill gas quality monitoring will be performed at the blower/flare.
- Landfill gas monitoring will continue on a quarterly basis during the 2020 reporting period.
- The first semi-annual 2020 sampling event is scheduled to occur in April or May, including leachate, groundwater, and surface water monitoring.
- The second semi-annual 2020 sampling event is scheduled to occur in October or November, including leachate, groundwater, and surface water monitoring.

Laboratory analysis of samples for organic analytes should continue to be provided using accepted USEPA approved methods by a NELAP accredited laboratory.

Preliminary evaluation of data, relative to established site-wide protection standards, from the two semi-annual periods will continue to be submitted as separate documents within approximately 60 days of the completion of sampling.

As recommended in the past, the observations in the semi-annual OM&M report will be consolidated into the annual report in 2021 and a semi-annual report will not be prepared. This is appropriate given that the OM&M activities are established and the Site conditions, as described herein, are generally stable. The Site conditions also warrant a reduction in the frequency of site inspections, from monthly to quarterly.

Continue the current leachate management program at the Site in 2020. To follow-up on the information presented in this Report, the following activities will be performed in 2020:

- WMII will replace the pumps and tubing at approximately 10 leachate extraction points at
  the Site. The pump replacement will be focused on the perimeter wells. The pump tubing
  will be replaced so that the pumps are placed approximately 1 foot off the bottom of the
  well, instead of at an elevation expected to achieve the target elevation (i.e., 761 feet
  amsl).
- WMII will complete the wellhead replacement effort identified as a recommendation in the 2018 annual report. Approximately 14 additional well heads will be replaced in 2020. Again, the effort will be focused on the perimeter wells.

- WMII will replace approximately four of the flush mount vaults used to protect the dual extraction well heads at the Site. The effort will focus on replacing the vaults known to be damaged (i.e., GW25R).
- Assess the need for continued leachate extraction from, and options for repair or replacement of, the four interior leachate extraction points where obstructions were identified by the camera evaluation in 2019.
- To assess the specific yield at the individual leachate extraction points, WMII will obtain depth to liquid measurements before shutting down the pumps for the fourth quarter (annual) liquid level measurements. WMII will also measure the depth to liquid at the wells within approximately 24 hours after shutting down the pumps, and then again after approximately 1 week after the pumps were shut off. This data will be included in the 2020 annual report.

## 7.0 2020 ACTIVITIES

OM&M of the landfill gas control system and leachate collection system at the Site is expected to continue in 2020. This includes site inspections, sampling, analysis, and reporting in accordance with the current plan, including the activities and recommendations identified herein.

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# Table 1. Environmental Monitoring Schedule 2019 Annual Report

#### HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

MEDIA MONITORING FEATURE		FREQUENCY	MONITORING POINTS	PARAMETERS	REFERENCE	
Landfill Gas	Perimeter gas monitoring probes	Annually	GP3, GP4A, GP5A, GP6, GP7, GP8	Pressure, CH <sub>4</sub> , N (as balance gas), O <sub>2</sub> , CO <sub>2</sub> , % LEL	35IAC 811.310(c)(3) and (d)(1)	
	Gas header blower/flare building	Monthly	Port at inflow to flare unit	Pressure, CH <sub>4</sub> , N (as balance gas), O <sub>2</sub> , CO <sub>2</sub> , flow rate, temperature	35IAC 811.312(d) and O&M Plan	
	Ambient Air	Annually	At least 3 locations 1 inch above ground and 100 feet from the edge of the unit	CH <sub>4</sub> , % LEL	35IAC 811.310(b)(8) and (c)(3)	
	Gas extraction wellheads	Quarterly	LP1R, LP2R, LP3, LP4, LP8, LP10, LP11, GWF2, GWF3, GWF4, GWF5, GWF8, GWF10, GW15, GW16, GW17, GW18, GW19, GW20, GW21, GW22, GW23, GW24, GW25R, GW26, GW27, GW28, GW29, GW30, GW31, GW32, GW33R, GW34, MHW, MHE	Pressure, CH <sub>4</sub> , N (as balance gas), O <sub>2</sub> , CO <sub>2</sub> , flow rate, temperature	O&M Plan	
Leachate	Leachate storage tank	Semi-annually	At tank	Table 3 of February 21, 2007, submittal to USEPA (approved 5/17/2007)	35IAC 811.309(g)(1)(2)	
		Annually	At tank	Table 3 of February 21, 2007, submittal to USEPA (approved 5/17/2007)	PSVP and O&M Plans	
	Leachate loadout	Weekly	Loadout	Volume of leachate hauled off site	O&M Plan	
	Leachate extraction wells	Quarterly	LP1R, LP2R, LP3, LP4, LP8, LP10, LP11, GWF2, GWF3, GWF4, GWF5, GWF8, GWF10, GW15, GW16, GW17, GW18, GW19, GW20, GW21, GW22, GW23, GW24, GW25R, GW26, GW27, GW28, GW29, GW30, GW31, GW32, GW33R, GW34, MHW, MHE	Liquid elevation	O&M Plan	
Groundwater	Groundwater monitoring wells	Semi-annually /Annually	US-01D, W-08D, W-06S, PZ-04U, PZ-03U, US-06D, W-03D, US-02D, R-01D, US-04S, US-04D, US-03D, US-05D, VW-03, US-06S, G-102	Table 1 of February 21, 2007, submittal to USEPA (approved 5/17/2007) and groundwater elevation	Table 22 of ROD; 35IAC 620.410	
	Groundwater monitoring wells	Semi-annually	US-01S, US-06I, W-03SA, W-03SB, W-04S, W-05S, US-03S, US-03I, W-02D, PZ-01, PZ-01U, PZ-02U, PZ-05U, PZ-06U, G-14S	Groundwater elevation	PSVP	
Surface Water	Sequoit Creek	Sem-iannually	SW-01, SW-02	Table 2 of February 21, 2007, submittal to USEPA (approved 5/17/2007)	35IAC 302.202 thru 302.212	

#### Notes:

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<sup>1)</sup> Environmental Monitoring Schedule was taken from Figure 1 on the Performance Standards Verification Plan HOD Landfill Site prepared by RMT, Inc. dated October 2001 / Revised April 2008.

## Table 2. Landfill Gas Control System Maintenance Log 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

	1 4'		Equipmer	nt		A	
Date	Location	Maintained	Repaired	Replaced	New	Maintenance Activity Description	
1/30/2019	Flare	Χ				Checked for water in the flare line	
1/30/2019	Air compressor	Χ				Oil added to air compressor	
2/5/2019	Flare	Χ				Checked for water in the flare line	
2/5/2019	Flare	Χ				Calibrated LEL sensors	
3/28/2019	Flare	Χ				Cleaned flame arrestor	
3/28/2019	Flare	Χ				Greased blower bearings	
3/28/2019	Air compressor	Χ				Cleaned and inspected air compressor coolers	
4/24/2019	Flare	Χ				Checked for water in the flare line	
5/14/2019	GW26	Χ				Inspected well with a camera	
5/14/2019	GW29	Χ				Inspected well with a camera	
5/14/2019	GWF10	Χ				Inspected well with a camera	
5/14/2019	GW24	Χ				Inspected well with a camera	
5/14/2019	GW20	Χ				Inspected well with a camera	
5/14/2019	GW22	Χ				Inspected well with a camera	
5/15/2019	GW21	Χ				Inspected well with a camera	
5/15/2019	GWF5	Χ				Inspected well with a camera	
5/15/2019	GWF4	Χ				Inspected well with a camera	
5/15/2019	LP8	Χ				Inspected well with a camera	
5/15/2019	GW19	Χ				Inspected well with a camera	
5/15/2019	GW33R	Χ				Inspected well with a camera	
5/15/2019	GW32	Χ				Inspected well with a camera	
5/15/2019	GWF2	Χ				Inspected well with a camera	
5/15/2019	GWF8	Χ				Inspected well with a camera	
5/15/2019	MHE	Χ				Inspected well with a camera	
5/16/2019	Flare	Χ				Cleaned flame arrestor	
5/16/2019	Flare	Χ				Greased blower bearings	
5/16/2019	Flare	Χ				Calibrated LEL sensors	
6/20/2019	Flare	Χ				Full service on the air compressor	
6/20/2019	Flare	Χ				Cleaned and inspected air compressor coolers	
6/21/2019	Flare	Χ				Checked for water in the flare line	
7/3/2019	Flare	Χ				Checked for water in the flare line	
7/3/2019	Flare	Χ				Greased blower bearings	
7/3/2019	Flare	Х				Cleaned flame arrestor	
7/3/2019	Flare	Χ				Calibrated LEL sensors	
8/27/2019	GW28		Х	Х	Х	Replaced well head, pump, and pump tubing	
8/27/2019	Flare		Х			Repaired pump in the flare knockout tank	

# Table 2. Landfill Gas Control System Maintenance Log 2019 Annual Report

## HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

5.	Location		Equipmer	nt		Martinton and Authority Description	
Date		Maintained	Repaired	Replaced	New	Maintenance Activity Description	
8/27/2019	GW26		Х	Х		Replaced well head and pump tubing. Cleaned and inspected pump while out	
8/28/2019	GW29		Х	Х		Replaced well head and pump tubing. Cleaned and inspected pump while out	
8/28/2019	GW24		Х	Х		Replaced well head and pump tubing. Cleaned and inspected pump while out	
8/29/2019	GW23		Х	Х		Replaced well head and pump tubing. Cleaned and inspected pump while out	
8/29/2019	GW23				Х	Replaced air pressure regulator and cycle counter	
8/29/2019	CS4			Х		Replaced air pressure regulator	
8/30/2019	GWF5		Х	Х		Replaced well head and pump tubing. Cleaned and inspected pump while out	
8/30/2019	GWF5			Х	Х	Replaced air pressure regulator and cycle counter	
8/30/2019	Flare	Х				Checked for water in the flare line	
9/3/2019	Flare			Х		Replaced bearings in the blower	
9/6/2019	Flare			Х		Replaced the drive coupling between the blower and the motor	
9/6/2019	Flare	Х				Checked for water in the flare line	
10/2/2019	Flare	Х				Checked for water in the flare line	
10/2/2019	Flare	Х				Calibrated LEL sensors	
10/2/2019	Flare	Х				Cleaned flame arrestor	
11/1/2019	Flare	Х				added oil to air compressor	
11/12/2019	Flare	Х				Checked for water in the flare line	
11/12/2019	Flare	Х				Greased blower bearings	
12/10/2019	Flare			Х		Replaced ASA for Remote Monitoring System	
12/10/2019	Flare	Х				Checked for water in the flare line	

#### Notes:

 $\label{thm:linear_constraints} Z:\Projects\25212005.00\Reports\2019\Annual\ Report\Tables\[Table\ 2-Maintenance\ Log.xlsx]Sheet 1$ 

<sup>1)</sup> Information in this table from WMII.

# Table 3. Landfill Gas Monitoring Data at the Blower/Flare 2019 Annual Report

## HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Date	Flow to Flare (cfm)	CH₄ (% by volume)	CO <sub>2</sub> (% by volume)	O <sub>2</sub> (% by volume)	Balance Gas (% by volume)	Flare Combustion Temperature (°F)
1/15/2019	92	45.4	4.1	7.8	42.7	651
2/11/2019	101	47.2	3.2	7.1	41.9	651
3/28/2019	158	33.8	11.7	10.4	44.1	648
4/12/2019	153	40.6	5.8	8.4	45.2	948
5/14/2019	153	38.5	7.3	9.6	44.6	946
6/17/2019	147	12.0	2.7	17.2	68.1	896
7/22/2019	149	36.9	8.7	9.0	45.4	891
8/22/2019	148	25.2	4.1	10.8	59.9	1,001
9/26/2019	101	25.6	11.8	8.6	54.0	997
10/18/2019	114	27.3	14.1	8.9	49.7	897
11/12/2019	126	11.9	2.6	17.3	68.2	1,008
12/20/2019	146	17.3	4.5	14.9	63.3	1,011

#### Abbreviations:

cfm = cubic feet per minute

°F = Degrees Fahrenheit

#### Notes:

1) Data presented in this table was collected by WMII.

 Created by: RRJ
 Date: 4/16/2011

 Last Revision by: ZTW
 Date: 3/2/2020

 Checked by: AJR
 Date: 3/3/2020

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#### Table 4. Leachate Cycle Counter Readings 2019 Annual Report

#### HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Well	Fourth Quarter (October 16, 2018)	First Quarter (March 28, 2019)	Second Quarter (May 15, 2019)	Third Quarter (September 28, 2019)	Fourth Quarter (October 25, 2019)	Difference in Cycle Counter Readings (Fourth Quarter 2018 to Fourth Quarter 2019)
GW15	199779	199779	199779	199779	199779	0
GW16	617945	973451	973451	973451	973451	355,506
GW17 <sup>(2)</sup>	400778	401344	401351	401351	401351	573
GW18	207	207	207	207	207	0
GW19 <sup>(2)(3)</sup>	590981	590972	590972	590972	590972	NA
GW20 <sup>(2)</sup>	209	209	209	209	209	0
GW21 <sup>(2)</sup>	419424	419426	419426	419426	419426	2
GW22	169883	275096	275097	275097	275099	105,216
GW23 <sup>(1)(4)</sup>	ND	1091	2157	4169	13726	12,635
GW24 <sup>(1)</sup>	763949	763949	763949	763949	763949	0
GW25R	33774	33774	33774	33774	33774	0
GW26 <sup>(1)(2)</sup>	306339	ND	ND	ND	472	1,305,867
GW27	824804	824901	824901	824901	824901	97
GW28 <sup>(1)</sup>	547026	547026	547026	547026	674654	127,628
GW29 <sup>(1)</sup>	201566	201410	201556	201560	202560	994
GW30	271734	271734	271734	271734	271734	0
GW31	ND	ND	ND	ND	ND	NA
GW32	157011	340232	459731	501246	840513	683,502
GW33R <sup>(2)</sup>	366	349	350	359	7694	7,328
GW34 <sup>(2)</sup>	710823	710823	710823	710823	710823	0
GWF2 <sup>(2)(3)</sup>	751353	751342	751342	751342	751342	NA
GWF3 <sup>(3)</sup>	228742	228731	228731	228731	228731	NA
GWF4 <sup>(2)</sup>	253705	253705	253705	253705	253705	0
GWF5 <sup>(1)(2)(4)</sup>	ND	ND	ND	ND	5187	Х
GWF8 <sup>(3)</sup>	4415	4402	4402	4402	4402	NA
GWF10	966620	966620	966620	966620	966620	0
LP1R	28322	28322	28322	28322	28322	0
LP2R <sup>(2)</sup>	430262	441479	441678	441678	441678	11,416
LP3	923485	923485	923485	923485	923485	0
LP4 <sup>(2)</sup>	489587	601102	601521	601943	601943	112,356
LP8	ND	ND	ND	ND	ND	NA
LP10 <sup>(2)</sup>	514967	514967	514967	514967	514967	0
LP11 <sup>(2)</sup>	630956	604506	604506	604506	604506	1,026,450
MHE <sup>(2)</sup>	42555	42555	42555	42555	42555	0
MHW	208	208	208	208	208	0
	•				•	Total
Abbreviations:						3,749,570

ND = No Data

#### Notes:

1) Cycle counter readings were recorded by WMII.

## Superscript Description:

<sup>&</sup>lt;sup>(4)</sup>Cycle counter replaced in August 2019.

Created by: RRJ	Date: 4/16/2011
Last Revision by: ZTW	Date: 3/2/2020
Checked by: AJR	Date: 3/5/2020

Z:\Projects\25212005.00\Reports\2019\Annual Report\Table 4 - Leachate Cycle Counter Readings.xls]Table 4

 $<sup>^{(1)}\</sup>mbox{Pump}$  cleaned, and repaired if necessary, during 2019 reporting period.

 $<sup>^{\</sup>left(2\right)}$  Pump cleaned, and repaired if necessary, during 2018 reporting period.

 $<sup>\</sup>ensuremath{^{(3)}}\textsc{Cycle}$  counter readings inconsistent; difference not applicable (NA).

#### Table 5. Leachate Levels - First Quarter 2019 (March 28, 2019) 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project No. 25212005.00

Well	Top of Casing Elevation <sup>(A)</sup> (FAMSL)	Depth to Leachate (feet)	Leachate Elevation (FAMSL)	Site-Wide Average Target Drawdown Elevation <sup>(1)</sup> (FAMSL)	Difference in Leachate Elevation from Site-Wide Average Target Drawdown Elevation (feet)
GW15	784.54	13.38	771.16	761	10.16
GW16	787.14	27.61	759.53	761	-1.47
GW17	789.63	19.00	770.63	761	9.63
GW18	793.56	21.40	772.16	761	11.16
GW19	790.86	18.81	772.05	761	11.05
GW20 <sup>(2)</sup>	785.37	17.70	767.67	761	6.67
GW21 <sup>(2)</sup>	784.57	27.05	757.52	761	-3.48
GW22 <sup>(2)</sup>	783.52	11.20	772.32	761	11.32
GW23 <sup>(2)</sup>	784.14	9.28	774.86	761	13.86
GW24 <sup>(2)</sup>	788.44	6.00	782.44	761	21.44
GW25R <sup>(2)</sup>	787.48	9.43	778.05	761	17.05
GW26 <sup>(2)</sup>	778.91	7.90	771.01	761	10.01
GW27 <sup>(2)</sup>	776.20	9.72	766.48	761	5.48
GW28 <sup>(2)</sup>	779.46	9.44	770.02	761	9.02
GW29 <sup>(2)</sup>	784.96	17.98	766.98	761	5.98
GW30 <sup>(2)</sup>	778.59	11.39	767.20	761	6.20
GW31	792.08	24.10	767.98	761	6.98
GW32	788.61	30.21	758.40	761	-2.60
GW33R	783.65	10.28	773.37	761	12.37
GW34	780.89	7.72	773.17	761	12.17
GWF2	792.10	20.06	772.04	761	11.04
GWF3	790.53	21.00	769.53	761	8.53
GWF4	787.41	18.03	769.38	761	8.38
GWF5 <sup>(2)</sup>	781.76	8.51	773.25	761	12.25
GWF8	792.56	14.81	777.75	761	16.75
GWF10	792.74	21.31	771.43	761	10.43
LP1R <sup>(2)</sup>	782.59	16.19	766.40	761	5.40
LP2R	787.30	25.40	761.90	761	0.90
LP3 <sup>(2)</sup>	781.72	13.75	767.97	761	6.97
LP4	790.08	17.62	772.46	761	11.46
LP8	788.93	18.94	769.99	761	8.99
LP10 <sup>(2)</sup>	782.56	11.10	771.46	761	10.46
LP11	790.07	12.63	777.44	761	16.44
MHE	791.86	27.00	764.86	761	3.86
MHW	792.20	21.72	770.48	761	9.48

#### Abbreviations:

FAMSL = feet above mean sea level

#### Superscript Description:

#### Notes

1) Measurements taken 24 hours after shutdown of the leachate pumps.

Created by: MOB	Date: 2/13/2012
Last revision by: ZTW	Date: 3/2/2020
Checked by: AJR	Date: 3/3/2020

<sup>(1)</sup> Based on design estimates and preliminary data, the site-wide average leachate elevation in the landfill was projected to decline to 761 feet amsl in approximately 9 to 15 years (RMT, 2001).

<sup>(2)</sup> Perimeter Wells

 $<sup>^{(</sup>A)}$  Top of casing elevations were obtained by R.E. Allen and Associates, LTD. on September 18, 2017.

### Table 6. Leachate Levels - Second Quarter 2019 (May 15, 2019) 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project No. 25212005.00

Well	Top of Casing Elevation <sup>(A)</sup> (FAMSL)	Depth to Leachate (feet)	Leachate Elevation (FAMSL)	Site-Wide Average Target Drawdown Elevation <sup>(1)</sup> (FAMSL)	Difference in Leachate Elevation from Site-Wide Average Target Drawdown Elevation (feet)	
GW15	784.54	14.76	769.78	761	8.78	
GW16	787.14	28.25	758.89	761	-2.11	
GW17	789.63	20.56	769.07	761	8.07	
GW18	793.56	20.96	772.60	761	11.60	
GW19	790.86	19.34	771.52	761	10.52	
GW20 <sup>(2)</sup>	785.37	18.62	766.75	761	5.75	
GW21 <sup>(2)</sup>	784.57	28.18	756.39	761	-4.61	
GW22 <sup>(2)</sup>	783.52	11.16	772.36	761	11.36	
GW23 <sup>(2)</sup>	784.14	8.94	775.20	761	14.20	
GW24 <sup>(2)</sup>	788.44	8.21	780.23	761	19.23	
GW25R <sup>(2)</sup>	787.48	10.55	776.93	761	15.93	
GW26 <sup>(2)</sup>	778.91	8.64	770.27	761	9.27	
GW27 <sup>(2)</sup>	776.20	11.73	764.47	761	3.47	
GW28 <sup>(2)</sup>	779.46	10.24	769.22	761	8.22	
GW29 <sup>(2)</sup>	784.96	19.36	765.60	761	4.60	
GW30 <sup>(2)</sup>	778.59	12.00	766.59	761	5.59	
GW31	792.08	23.74	768.34	761	7.34	
GW32	788.61	30.71	757.90	761	-3.10	
GW33R	783.65	11.64	772.01	761	11.01	
GW34	780.89	8.82	772.07	761	11.07	
GWF2	792.10	20.31	771.79	761	10.79	
GWF3	790.53	20.97	769.56	761	8.56	
GWF4	787.41	19.24	768.17	761	7.17	
GWF5 <sup>(2)</sup>	781.76	9.23	772.53	761	11.53	
GWF8	792.56	13.97	778.59	761	17.59	
GWF10	792.74	22.18	770.56	761	9.56	
LP1R <sup>(2)</sup>	782.59	16.34	766.25	761	5.25	
LP2R	787.30	24.85	762.45	761	1.45	
LP3 <sup>(2)</sup>	781.72	14.36	767.36	761	6.36	
LP4	790.08	16.81	773.27	761	12.27	
LP8	788.93	19.55	769.38	761	8.38	
LP10 <sup>(2)</sup>	782.56	13.41	769.15	761	8.15	
LP11	790.07	14.23	775.84	761	14.84	
MHE	791.86	27.66	764.20	761	3.20	
MHW	792.20	22.02	770.18	761	9.18	

### Abbreviations:

FAMSL = feet above mean sea level

### Superscript Description:

### Notes

1) Measurements taken 24 hours after shutdown of the leachate pumps.

Created by: MOB	Date: 2/13/2012
Last revision by: ZTW	Date: 3/2/2020
Checked by: AJR	Date: 3/3/2020

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 6 - Leachate Levels\_Second Quarter.xls]Table 6

<sup>&</sup>lt;sup>(1)</sup> Based on design estimates and preliminary data, the site-wide average leachate elevation in the landfill was projected to decline to 761 feet amsl in approximately 9 to 15 years (RMT, 2001).

<sup>(2)</sup> Perimeter Wells

<sup>&</sup>lt;sup>(A)</sup> Top of casing elevations were obtained by R.E. Allen and Associates, LTD. on September 18, 2017.

### Table 7. Leachate Levels - Third Quarter 2019 (September 28, 2019) 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Well	Well Top of Casing Elevation <sup>(A)</sup> (FAMSL) Depth to		Leachate Elevation (FAMSL)	Site-Wide Average Target Drawdown Elevation <sup>(1)</sup> (FAMSL)	Difference in Leachate t Elevation from Site-Wide Average Target Drawdown Elevation (feet)		
GW15	784.54	14.24	770.30	761	9.30		
GW16	787.14	28.27	758.87	761	-2.13		
GW17	789.63	20.34	769.29	761	8.29		
GW18	793.56	22.13	771.43	761	10.43		
GW19	790.86	19.16	771.70	761	10.70		
GW20 <sup>(2)</sup>	785.37	18.98	766.39	761	5.39		
GW21 <sup>(2)</sup>	784.57	28.31	756.26	761	-4.74		
GW22 <sup>(2)</sup>	783.52	10.97	772.55	761	11.55		
GW23 <sup>(2)</sup>	784.14	9.23	774.91	761	13.91		
GW24 <sup>(2)</sup>	788.44	9.38	779.06	761	18.06		
GW25R <sup>(2)</sup>	787.48	10.36	777.12	761	16.12		
GW26 <sup>(2)</sup>	778.91	8.15	770.76	761	9.76		
GW27 <sup>(2)</sup>	776.20	11.84	764.36	761	3.36		
GW28 <sup>(2)</sup>	779.46	9.86	769.60	761	8.60		
GW29 <sup>(2)</sup>	784.96	18.43	766.53	761	5.53		
GW30 <sup>(2)</sup>	778.59	11.94	766.65	761	5.65		
GW31	792.08	23.28	768.80	761	7.80		
GW32	788.61	30.25	758.36	761	-2.64		
GW33R	783.65	12.36	771.29 761		10.29		
GW34	780.89	8.11	772.78	761	11.78		
GWF2	792.10	19.27	772.83	761	11.83		
GWF3	790.53	20.48	770.05	761	9.05		
GWF4	787.41	17.62	769.79	761	8.79		
GWF5 <sup>(2)</sup>	781.76	9.16	772.60	761	11.60		
GWF8	792.56	14.52	778.04	761	17.04		
GWF10	792.74	21.96	770.78	761	9.78		
LP1R <sup>(2)</sup>	782.59	17.25	765.34	761	4.34		
LP2R	787.30	23.61	763.69	761	2.69		
LP3 <sup>(2)</sup>	781.72	14.76	766.96	761	5.96		
LP4	790.08	17.35	772.73	761	11.73		
LP8	788.93	20.06	768.87	761	7.87		
LP10 <sup>(2)</sup>	782.56	12.98	769.58	761	8.58		
LP11	790.07	13.72	776.35	761	15.35		
MHE	791.86	27.13	764.73	761	3.73		
MHW	792.20	21.84	770.36	761	9.36		

### Abbreviations:

FAMSL = feet above mean sea level

### Superscript Description:

### Notes:

1) Measurements taken 24 hours after shutdown of the leachate pumps.

Created by: MOB	Date: 2/13/2012
Last revision by: ZTW	Date: 3/2/2020
Checked by: AJR	Date: 3/3/2020

 $Z:\Projects\25212005.00\Reports\2019\Annual\ Report\Tables\[Table 7-Leachate\ Levels\_Third\ Quarter.xls]\ Table 7-Leachate\ Quarter.xls]\ Table 9-Leachate\ Quarter.xls]\ Table 9-Leachate$ 

<sup>(1)</sup> Based on design estimates and preliminary data, the site-wide average leachate elevation in the landfill was projected to decline to 761 feet amsl in approximately 9 to 15 years (RMT, 2001).

<sup>(2)</sup> Perimeter Wells

 $<sup>^{(</sup>A)}$  Top of casing elevations were obtained by R.E. Allen and Associates, LTD. on September 18, 2017.

### Table 8. Leachate Levels - Fourth Quarter 2019 (October 25, 2019) 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Top of Casing Well Elevation <sup>(A)</sup> (FAMSL)		Depth to Leachate (feet)	Leachate Elevation (FAMSL)	Site-Wide Average Target Drawdown Elevation <sup>(1)</sup> (FAMSL)	Difference in Leachate Elevation from Site-Wide Average Target Drawdown Elevation (feet)	
GW15	784.54	15.31	769.23	761	8.23	
GW16	787.14	27.42	759.72	761	-1.28	
GW17	789.63	19.75	769.88	761	8.88	
GW18	793.56	21.05	772.51	761	11.51	
GW19	790.86	18.23	772.63	761	11.63	
GW20 <sup>(2)</sup>	785.37	17.56	767.81	761	6.81	
GW21 <sup>(2)</sup>	784.57	27.68	756.89	761	-4.11	
GW22 <sup>(2)</sup>	783.52	9.64	773.88	761	12.88	
GW23 <sup>(2)</sup>	784.14	15.68	768.46	761	7.46	
GW24 <sup>(2)</sup>	788.44	10.62	777.82	761	16.82	
GW25R <sup>(2)</sup>	787.48	9.61	777.87	761	16.87	
GW26 <sup>(2)</sup>	778.91	11.64	767.27	761	6.27	
GW27 <sup>(2)</sup>	776.20	10.76	765.44	761	4.44	
GW28 <sup>(2)</sup>	779.46	13.42	766.04	761	5.04	
GW29 <sup>(2)</sup>	784.96	18.97	765.99	761	4.99	
GW30 <sup>(2)</sup>	778.59	10.85	767.74	761	6.74	
GW31	792.08	22.62	769.46	761	8.46	
GW32	788.61	30.61	758.00	761	-3.00	
GW33R	783.65	18.22	765.43	761	4.43	
GW34	780.89	8.06	772.83	761	11.83	
GWF2	792.10	18.64	773.46	761	12.46	
GWF3	790.53	19.56	770.97	761	9.97	
GWF4	787.41	16.32	771.09	761	10.09	
GWF5 <sup>(2)</sup>	781.76	13.67	768.09	761	7.09	
GWF8	792.56	13.76	778.80	761	17.80	
GWF10	792.74	20.72	772.02	761	11.02	
LP1R <sup>(2)</sup>	782.59	15.72	766.87	761	5.87	
LP2R	787.30	23.05	764.25	761	3.25	
LP3 <sup>(2)</sup>	781.72	14.26	767.46	761	6.46	
LP4	790.08	16.73	773.35	761	12.35	
LP8	788.93	19.37	769.56	761	8.56	
LP10 <sup>(2)</sup>	782.56	11.54	771.02	761	10.02	
LP11	790.07	13.06	777.01	761	16.01	
MHE	791.86	27.10	764.76	761	3.76	
MHW	792.20	21.36	770.84	761	9.84	

### Abbreviations:

FAMSL = feet above mean sea level

### Notes:

1) Fourth Quarter measurements taken 7 days after shutdown of the leachate pumps.

Created by: MOB	Date: 2/13/2012
Last revision by: ZTW	Date: 1/10/2019
Checked by: AJR	Date: 3/3/2020

 $Z:\Projects\25212005.00\Reports\2019\Annual\ Report\Tables\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma\Gamma$ 

Superscript Description:

<sup>(1)</sup> Based on design estimates and preliminary data, the site-wide average leachate elevation in the landfill was projected to decline to 761 feet amsl in approximately 9 to 15 years (RMT, 2001).

<sup>(2)</sup> Perimeter Wells

 $<sup>^{(</sup>A)}$  Top of casing elevations were obtained by R.E. Allen and Associates, LTD. on September 18, 2017.

## Table 9. Leachate Drawdown Performance 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

			October 25, 2019				
	January 2001	Required	Actual	Total Delta	Total		
Well	Leachate Elevation (FAMSL)	Elevation Change <sup>(1)</sup> (feet)	Leachate Elevation (FAMSL)	Change in Leachate Elevation Since 2001 (feet)	Percent of Required Elevation Change Since 2001		
GW15	767.04	-6.04	769.23	2.19	Х		
GW16	767.43	-6.43	759.72	-7.71	Achieved		
GW17	765.58	-4.58	769.88	4.30	Х		
GW18	763.60	-2.60	772.51	8.91	Х		
GW19	772.46	-11.46	772.63	0.17	Х		
GW20 <sup>(2)</sup>	775.86	-14.86	767.81	-8.05	54.2%		
GW21 <sup>(2)</sup>	769.50	-8.50	756.89	-12.61	Achieved		
GW22 <sup>(2)</sup>	770.01	-9.01	773.88	3.87	X		
GW23 <sup>(2)</sup>	774.70	-13.70	768.46	-6.24	45.5%		
GW24 <sup>(2)</sup>	779.86	-18.86	777.82	-2.04	10.8%		
GW25R <sup>(2)</sup>	781.86	-20.86	777.87	-3.99	19.1%		
GW26 <sup>(2)</sup>	765.00	-4.00	767.27	2.27	X		
GW27 <sup>(2)</sup>	766.03	-5.03	765.44	-0.59	11.7%		
GW28 <sup>(2)</sup>	765.76	-4.76	766.04	0.28	X		
GW29 <sup>(2)</sup>	778.10	-17.10	765.99	-12.11	70.8%		
GW30 <sup>(2)</sup>	765.84	-4.84	767.74	1.90	X		
GW31	764.01	-3.01	769.46	5.45	X		
GW32	761.50	-0.50	758.00	-3.50	Achieved		
GW33R	761.80	-0.80	765.43	3.63	X		
GW34	761.77	-0.77	772.83	11.06	X		
GWF2	766.28	-5.28	773.46	7.18	X		
GWF3	767.22	-6.22	770.97	3.75	X		
GWF4	754.60	0.00	771.09	16.49	X		
GWF5 <sup>(2)</sup>	768.10	-7.10	768.09	-0.01	0.1%		
GWF8	779.00	-18.00	778.80	-0.20	1.1%		
GWF10	768.65	-7.65	772.02	3.37	X		
LP1R <sup>(2)</sup>	767.04	-6.04	766.87	-0.17	2.8%		
LP2R	771.00	-10.00	764.25	-6.75	67.5%		
LP3 <sup>(2)</sup>	765.50	-4.50	767.46	1.96	X		

# Table 9. Leachate Drawdown Performance 2019 Annual Report

### HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

			October 25, 2019				
	January 2001	Required	Actual	Total Delta	Total		
Well	Leachate Elevation (FAMSL)	Elevation Change <sup>(1)</sup> (feet)	Leachate Elevation (FAMSL)	Change in Leachate Elevation Since 2001 (feet)	Percent of Required Elevation Change Since 2001		
LP4	773.20	-12.20	773.35	0.15	X		
LP8	775.40	-14.40	769.56	-5.84	40.6%		
LP10 <sup>(2)</sup>	767.10	-6.10	771.02	3.92	X		
LP11	770.88	-9.88	777.01	6.13	X		
MHE	762.10	-1.10	764.76	2.66	X		
MHW	768.50	-7.50	770.84	2.34	X		

### Abbreviations:

FAMSL = feet above mean sea level

### Notes:

- 1) Leachate elevations were calculated by SCS from depth to liquid measurements recorded by Waste Management on October 25, 2019.
- 2) "X" denotes that the leachate elevation has increased since January 2001
- 3) "Achieved" denotes that the leachate elevation is below the target elevation

### Superscript Description

- (1) Based on design estimates and preliminary data, the site-wide average leachate elevation in the landfill was projected to decline to 761 feet amsl in approximately 9 to 15 years (RMT, 2008e).
- (2) Perimeter Well
- (3) The leachate elevation measured at GWF-4 in 2001 was below 761 feet amsl

Created by: MOB	Date: 4/9/2012
Last revision by: ZTW	Date: 3/2/2020
Checked by: AJR	Date: 3/3/2020

 $\label{thm:linear_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_continuous_co$ 

# Table 9a. Leachate Well Maintenance Summary 2019 Annual Report Diagram Antioch Illinois / SCS Engineers Project #3531300

HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

	Quarterly Leachate Elevation						Potential 2020 Maintenance			]						
Well	10/16/2018 (FAMSL)	3/28/2019 (FAMSL)	5/15/2019 (FAMSL)	9/28/2019 (FAMSL)	10/25/2019 (FAMSL)	Q4 2019 Feet above Target (761 FAMSL)	Well Bottom Elevation	Elevation Change Q4 2018 - Q4 2019 (feet)	2019 Elevation Range (feet)	Pump Maintenance Performed	Wellhead Replaced	Camera Inspection	Replace Wellhead	Replace Pump & Tubing	Replace Vault	Notes
GW20 <sup>(1)</sup>	758.37	767.67	766.75	766.39	767.81	6.8	752.4*	-9.4	1.4	7/26/2018		5/14/2019		Х		
GW21 <sup>(1)</sup>	760.26	757.52	756.39	756.26	756.89	-4.1	742.5*	3.4	1.3	4/16/2018		5/15/2019	Х	Χ		
GW22 <sup>(1)</sup>	762.85	772.32	772.36	772.55	773.88	12.9	750.1*	-11.0	1.6			5/14/2019	Х	Х		
GW23 <sup>(1)</sup>	774.17	774.86	775.20	774.91	768.46	7.5	747.4	5.7	6.7	8/29/2019	8/29/2019					
GW24 <sup>(1)</sup>	780.02	782.44	780.23	779.06	777.82	16.8	758.1*	2.2	4.6	8/28/2019	8/28/2019	5/14/2019				
GW25R <sup>(1)</sup>	778.26	778.05	776.93	777.12	777.87	16.9	756.2	0.4	1.1	/ /45 /0040			Х	Х	Х	Seized bolts at well head. Vault cover damaged.
GW26 <sup>(1)</sup>	769.86	771.01	770.27	770.76	767.27	6.3	756.5*	2.6	3.7	6/15/2018, 8/27/2019	8/27/2019	5/14/2019				
GW27 <sup>(1)</sup>	759.99	766.48	764.47	764.36	765.44	4.4	759.8	-5.5	2.1				Х			
GW28 <sup>(1)</sup>	768.52	770.02	769.22	769.60	766.04	5.0	757.7	2.5	4.0	8/27/2019	8/27/2019					
GW29 <sup>(1)</sup>	768.93	766.98	765.60	766.53	765.99	5.0	762.2*	2.9	1.4	8/28/2019	8/28/2019	5/14/2019	.,			
GW30 <sup>(1)</sup>	766.94	767.20	766.59	766.65	767.74	6.7	757.5	-0.8	1.1	10 /F /2010		<del>                                     </del>	Х			
GWF5 <sup>(1)</sup>	754.71	773.25	772.53	772.60	768.09	7.1	758.5*	-13.4	5.2	10/5/2018, 8/30/2019	8/30/2019	5/15/2019				Turbid leachate; limited visibility for camera.
LP10 <sup>(1)</sup>	773.88	771.46	769.15	769.58	771.02	10.0	755.3	2.9	2.3	3/21/2018			Х	Х		
LP1R <sup>(1)</sup>	766.57	766.40	766.25	765.34	766.87	5.9	754.1	-0.3	1.5				X	Х		
LP3 <sup>(1)</sup>	766.85	767.97	767.36	766.96	767.46	6.5	764.2	-0.6	1.0				Х			
Perimeter Well Average	767.35	770.24	769.29	769.24	768.58											
GW15	761.12	771.16	769.78	770.30	769.23	8.2	754.3	-8.11	1.9							
GW16	760.27	759.53	758.89	758.87	759.72	-1.3	752.3	0.55	0.9							
GW17	762.61	770.63	769.07	769.29	769.88	8.9	755.2	-7.27	1.6	7/26/2018			Х	Х		
GW18 GW19	779.41 769.34	772.16 772.05	772.60 771.52	771.43 771.70	772.51 772.63	11.5 11.6	756.4 746.1*	6.90 -3.29	1.2 1.1	7/26/2018		5/15/2019				
GW19 GW31	767.12	767.98	768.34	768.80	769.46	8.5	755.3	-3.29	1.5	7/20/2018		5/15/2019				
GW31	758.79	758.40	757.90	758.36	758.00	-3.0	752.9	0.79	0.5			5/15/2019				Well obstructed approximately 20 feet below ground surface.
CW22D	771 57	770.07	770.01	771.00	7/5 40	4.4	727.0*	( 12	7.0	0/0//2010		F /1F /2010			V	C
GW33R GW34	771.56 769.89	773.37 773.17	772.01 772.07	771.29 772.78	765.43 772.83	4.4 11.8	736.8* 729.3	6.13 -2.94	7.9 1.1	9/26/2018 10/5/2018		5/15/2019	X	X	Х	Some silt at bottom of well.
GWF10	769.69	771.43	770.56	770.78	772.02	11.0	729.3 754.1*	-3.92	1.5	10/3/2010		5/14/2019	^	^		
GWF2	773.06	771.43	771.79	772.83	773.46	12.5	751.0	-0.40	1.7	6/15/2018		5/15/2019				Well obstructed approximately 30 feet below ground surface.
GWF3	768.56	769.53	769.56	770.05	770.97	10.0	760.1	-2.41	1.4			<u> </u>	Х	Х		
GWF4	770.50	769.38	768.17	769.79	771.09	10.1	746.4	-0.59	2.9	4/16/2018		5/15/2019				Well obstructed. Unable to remove pump.
GWF8	776.58	777.75	778.59	778.04	778.80	17.8	754.4	-2.22	1.0			5/15/2019				Well obstructed. Unable to remove pump.
LP11	772.43	777.44	775.84	776.35	777.01	16.0	756.1	-4.58	1.6	9/26/2018						
LP2R	758.76	761.90	762.45	763.69	764.25	3.3	749.8	-5.49	2.4	3/21/2018			Х	Х	Х	
LP4	780.24	772.46	773.27	772.73	773.35	12.4	758.3	6.89	0.9	3/21/2018			Х			
LP8	763.90	769.99	769.38	768.87	769.56	8.6	753.0*	-5.66	1.1			5/15/2019			Х	
MHE	763.25	764.86	764.20	764.73	764.76	3.8	747.2*	-1.51	0.7	6/15/2018		5/15/2019				
MHW	770.38	770.48	770.18	770.36	770.84	9.8	758.5	-0.46	0.7							
Average	768.67	769.79	769.31	769.55	769.79											

Date: 4/16/2020

Date: 4/17/2020

Date: 4/21/2020

Created by: ZTW

Last revision by: ZTW

Checked by: JR

Abbreviations:

FAMSL - Feet above mean sea level

Q4 - Fourth Quarter

Superscript Description

(1) Perimeter Well

### Notes:

- 1) Leachate elevations provided by Waste Management personnel.
- 2) Pumps stuck in leachate wells GWF8, GWF4, GWF2 and GW32 inhibited inspection of well.
- 3) No significant silt build up or plugging of screens were noted during inspection with camera.
- 4) Pump maintenance includes pump and tubing replacement to reinstall pump approximately 1 foot from bottom of well.
- 5) Elevations highlighted in red and green indicate a decrease and increase in elevation relative to the prior quarter, respectively.
- 6) Well bottom elevations obtained on July 29, 2018 by Waste Management personnel, as updated by camera inspection (\*). Elevations above 756 FAMSL are highlighted (< 5 feet below target level of 761 FAMSL).

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 9a - Leachate Well Maintenance Summary.xls.xlsx]Sheet1 (2)

# Table 10. Leachate Sample Results Summary 2019 Annual Report

### HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Constituent	Effluent Standards for Off-site Disposal at a Wastewater Treatment Plant (mg/L unless otherwise indicated) <sup>(1)</sup>	Leachate Sample Results May 6, 2019 (mg/L unless otherwise indicated)	Leachate Sample Results November 4, 2019 (mg/L unless otherwise indicated)	
Arsenic	0.25	<0.01	NA	
Barium	2.0	0.4	NA	
Biologic Oxygen Demand	30	18.5	8.5	
Cadmium	0.15	<0.005	NA	
Chromium	1.0	0.0114	NA	
Copper	0.5	0.0245	NA	
Cyanide	0.10	<0.01 F1	NA	
Fluoride	15.0	<0.5	NA	
Iron	2.0	15.3	11.2	
Lead	0.2	0.0128	NA	
Manganese	1.0	0.179	NA	
Mercury	0.003 (2)	<0.0002	NA	
Nickel	1.0	0.0294	NA	
На	6-9 SU	8.01	7.34	
Total Recoverable Phenolics	0.3	0.02	NA	
Silver	0.1	<0.01	NA	
Zinc	1.0	0.0447	NA	
Total Suspended Solids (TSS)	15.0	<5	18.8	

Abbreviations:

mg/L = milligrams per liter NA = Not Analyzed SU = standard units

### Laboratory Qualifier:

F1 = MS and/or MSD Recovery is outside acceptance limits

### Notes:

- 1) The constituents and screening criteria shown in this table are wastewater effluent standards for leachate as identified in Table 4 of the PSVP (RMT 2008).
- 2) Bold values indicate sample concentrations above standard.
- 3) Metals results are total.

### Superscript Description:

- $^{(1)}\,$  Derived from 35 IAC 304.124 through 304.125, concentrations for metals are total.
- (2) Interpreted from 135 IAC 304.126.

 Created by: MOB
 Date: 2/13/2012

 Last Revision by: ZTW
 Date: 1/6/2020

 Checked by: LMH
 Date: 2/28/2020

Table 11. Groundwater Level Measurements - First Semi-annual Monitoring Event 2019 Annual Report
HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Groundwater Level Measurement Point	Top of Well Elevation (FAMSL)	Depth to Water (feet)	' Hevation		Date of Groundwater Level Measurement
Deep Sand and Gravel					
PZ-01	788.48	53.23	735.25	119.2	5/6/2019
R-01D	774.68	39.96	734.72	101.2	5/6/2019
US-01D	768.88	34.18	734.70	95.8	5/6/2019
US-02D	770.73	36.84	733.89	113.1	5/6/2019
US-03D	769.72	36.11	733.61	83.2	5/6/2019
US-04D	772.70	38.94	733.76	105.5	5/6/2019
US-05D	767.73	33.72	734.01	95.9	5/6/2019
US-06D	770.09	35.80	734.29	85.2	5/6/2019
W-02D	773.36	38.49	734.87	90.6	5/6/2019
W-03D	765.93	31.93	734.00	80.9	5/6/2019
W-08D	768.14	33.62	734.52	95.8	5/6/2019
Maximum Difference in	Deep Sand and Gr	avel Elevations:	1.64		
	I	Minimum Elevation:	733.61	US-03D	
	N	Maximum Elevation:	735.25	PZ-01	

Intermediate Screened We	ell				
US-03I	769.93	32.91	737.02	5.8	5/6/2019
US-06I	770.21	20.58	749.63	64.8	5/6/2019
W-03SB	766.81	3.33	763.48	32.4	5/6/2019
Maximum Differer	nce in Intermediate E	levations:	26.46		
	N	/linimum Elevation:	737.02	US-03I	
	M	laximum Elevation:	763.48	W-03SB	

allow Sand and Gravel					
G-102	773.53	10.01	763.52	24.4	5/6/2019
G-14S	770.34	3.95	766.39	11.6	5/6/2019
PZ-01U	766.41	3.34	763.07	27.0	5/6/2019
PZ-02U	768.70	4.09	764.61	15.9	5/6/2019
PZ-03U	766.27	2.78	763.49	39.5	5/6/2019
PZ-04U	766.49	2.71	763.78	30.0	5/6/2019
PZ-05U	771.11	6.28	764.83	34.4	5/6/2019
PZ-06U	766.63	2.90	763.73	35.0	5/6/2019
US-01S	768.69	4.22	764.47	15.6	5/6/2019
US-03S	770.48	7.93	762.55	25.1	5/6/2019
US-04S	773.67	10.39	763.28	25.4	5/6/2019
US-06S	769.90	6.45	763.45	43.3	5/6/2019
W-03SA	766.54	3.22	763.32	17.3	5/6/2019
W-04S	769.97	7.27	762.70	16.2	5/6/2019
W-05S	773.49	9.83	763.66	17.8	5/6/2019
W-06S	767.41	3.92	763.49	17.1	5/6/2019
Maximum Difference ir	Shallow Sand and Gi	ravel Elevations:	3.84		

Minimum Elevation: 762.55 US-03S

Maximum Elevation: 766.39 G-14S

Abbreviations: FAMSL = feet above mean sea level Average groundwater elevation (W-05S, W-06S, PZ-03U, P-Z04U, and PZ-05U)

763.85

### Notes:

 If the leachate elevations in GW-20, GW-21, GW-22, GW-23, GW-24, GW-25R, GW-26, GW-27, GW-28, GW-29, GW-30, GWF-5, LP1R, LP3, and LP10 are below the average groundwater elevation in W-055, W-065, PZ-03U, PZ-04U, and PZ-05U, then inward gradients to the landfill in the area of the shallow sand and gravel aquifer have been established (RMT, 2008 Performance Standards Verification Plan)

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 Date: 1/7/2020

 Checked by: LMH
 Date: 1/30/2020

 $Z: \Pojects \ 25212005.00 \ Reports \ 2019 \ Annual \ Report \ 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Level \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Measurements-1st \ Event. \\ xis] Table 11-Groundwater \ Measurements-1st \ Measurements-1s$ 

Table 12. Groundwater Level Measurements - Second Semi-annual Monitoring Event
2019 Annual Report
HOD Landfill - Antioch Illinois / SCS Engineers Project #25212005 00

Groundwater Level Measurement Point	Top of Well Elevation (FAMSL)	Depth to Water (feet)	Groundwater Elevation (FAMSL)	Total Well Depth (feet)	Date of Groundwater Leve Measurement
eep Sand and Gravel					
PZ-01	788.48	52.24	736.24	119.2	11/4/2019
R-01D	774.68	38.29	736.39	101.2	11/4/2019
US-01D	768.88	32.88	736.00	95.8	11/4/2019
US-02D	770.73	35.20	735.53	113.1	11/4/2019
US-03D	769.72	34.26	735.46	83.2	11/4/2019
US-04D	772.70	36.96	735.74	105.5	11/4/2019
US-05D	767.73	31.82	735.91	95.9	11/4/2019
US-06D	770.09	34.24	735.85	85.2	11/4/2019
W-02D	773.36	36.98	736.38	90.6	11/4/2019
W-03D	765.93	30.22	735.71	80.9	11/4/2019
W-08D	768.14	32.15	735.99	95.8	11/4/2019
Maximum Difference in	Deep Sand and G	Gravel Elevations:	0.93		
		Minimum Elevation:	735.46	US-03D	
		Maximum Elevation:	736.39	R-01D	
ermediate Screened We	ell				_
US-03I	769.93	31.24	738.69	5.8	11/4/2019
US-06I	770.21	20.00	750.21	64.8	11/4/2019
W-03SB	766.81	3.27	763.54	32.4	11/4/2019
Maximum Differen	nce in Intermediate	Elevations:	24.85		<b>-</b>
		Minimum Elevation:	738.69	US-03I	
		Maximum Elevation:	763.54	W-03SB	
allow Sand and Gravel					
G-102	773.53	9.91	763.62	24.4	11/4/2019
G-14S	770.34	4.64	765.70	11.6	11/4/2019
PZ-01U	766.41	3.29	763.12	27.0	11/4/2019
PZ-02U	768.70	4.04	764.66	15.9	11/4/2019
PZ-03U	766.27	2.75	763.52	39.5	11/4/2019
PZ-04U	766.49	2.70	763.79	30.0	11/4/2019
PZ-05U	771.11	6.75	764.36	34.4	11/4/2019
PZ-06U	766.63	2.87	763.76	35.0	11/4/2019
US-01S	768.69	4.18	764.51	15.6	11/4/2019
US-03S	770.48	7.87	762.61	25.1	11/4/2019
US-04S	773.67	10.41	763.26	25.4	11/4/2019
US-06S	769.90	6.38	763.52	43.3	11/4/2019
W-03SA	766.54	3.18	763.36	17.3	11/4/2019
W-04S	769.97	7.25	762.72	16.2	11/4/2019
W-05S	773.49	9.79	763.70	17.8	11/4/2019
144.046	7.7.11	0.07	7.0.5.	47.4	44/4/0040

Minimum Elevation:	762.61	US-03S
Maximum Elevation:	765.70	G-14S

Abbreviations: amsl = above mean sea level

W-06S

Average groundwater elevation (W-05S, W-06S, PZ-03U, P-Z04U, and PZ-05U)

763.54

3.09

17.1

763.78

11/4/2019

### Notes:

It le leachate elevations in GW-20, GW-21, GW-22, GW-23, GW-24, GW-25R, GW-26, GW-27, GW-28, GW-29, GW-30, GWF-5, LP1R, LP3, and LP10 are below the average groundwater elevation in W-05S, W-06S, PZ-03U, PZ-04U, and PZ-05U, then inward gradients to the landfill in the area of the shallow sand and gravel aquifer have been established (RMT, 2008 Performance Standards Verification Plan)

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Checked by: LMH	Date: 1/30/2020

767.41

Maximum Difference in Shallow Sand and Gravel Elevations:

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 12 - Groundwater Level Measurements - 2nd Event.xls]Table 12

# Table 12a. Groundwater Elevations at US-03D and US-04D 2019 Annual Report

### HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Date	US-03D (FAMSL)	US-04D (FAMSL)	US-03D > US- 04D (FAMSL)	US-03D < US- 04D (FAMSL)
3/30/2011	728.72	728.63	X	
10/17/2011	727.31	727.29	X	
4/14/2012	728.72	728.93		X
10/12/2012	725.86	725.66	X	
4/20/2013	729.59	729.39	Х	
10/10/2013	726.93	726.55	Χ*	
4/17/2014	728.55	728.38	Х	
10/21/2014	728.77	728.7	Х	
4/10/2015	729.15	729.47		X
10/9/2015	729.76	729.49	Х	
5/16/2016	732.54	732.37	Х	
10/14/2016	728.95	728.82	Х	
5/8/2017	731.89	731.73	X	
10/16/2017	730.33	730.15	X	
5/9/2018	730.92	731.34		Χ*
10/17/2018	730.53	730.27	Х	
5/6/2019	733.61	733.76		Х
11/4/2019	735.46	735.74		Х

Distribution			70%	30%
Maximum Range (feet)	8.15	8.45		
Maximum Difference*			0.38	0.42

### Abbreviations:

FAMSL - Feet above mean sea level

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Checked by: GS	Date: 4/23/2020

 $\label{thm:cont} $Z:\Pr(S)=0.00\Reports\2019\Annual\Report\Tables\[Table\12a\US-03D\ and\ US-04D\ GW\ Elevations.xlsx]\Sheet1$ 

### Table 13. Groundwater Exceedance Summary 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Well	Compound	Site-Wide Groundwater Protection Standard <sup>(2)</sup>	First Semi-annual Monitoring Event <sup>(1)</sup>	Second Semi-annual Monitoring Event <sup>(1)</sup>
W-06S	Chloride, Dissolved (mg/L)	200	290	255
US-04S	Chloride, Dissolved (mg/L)	200	236	242
G-102	Chloride, Dissolved (mg/L)	200	226	220
US-03D	Chloride, Dissolved (mg/L)	200	260	244
US-03D	cis-1,2-Dichloroethene (ug/L)	70	290	260
W-06S	Iron, Dissolved (ug/L)	5,000	14,300	13,700
G-102	Iron, Dissolved (ug/L)	5,000	5,580	6,050
PZ-03U	Iron, Dissolved (ug/L)	5,000	5,060	(-)
W-06S	Manganese, Dissolved (ug/L)	150	506	593
PZ-04U	Manganese, Dissolved (ug/L)	150	192	194
W-08D	Manganese, Dissolved (ug/L)	150	210	194
W-06S	Sulfate, Dissolved (mg/L)	400	608	(-)
W-06S	Total Dissolved Solids Field Filtered (mg/L)	1,200	2,020	1,670
W-06S	Vinyl chloride (ug/L)	2	7.3	(-)
US-03D	Vinyl chloride (ug/L)	2	66	69

### Abbreviations:

 $\mu$ g/L = micrograms per liter D = Analyte value is from a diluted analysis

Laboratory Qualifier:

mg/L = milligrams per liter (-) = result not quantified or < criteria

### Superscript Description:

<sup>(1)</sup> Groundwater samples were collected by EMT during the May and November 2019 semi-annual sampling ever

Created by: ZTW	Date: 1/7/2020
Last Revision by: ZTW	Date: 1/7/2020
Checked by: LMH	Date: 1/30/2020

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 13 - Groundwater Exceedance Summary.xls]Table 13

<sup>(2)</sup> Groundwater protection standards for the HOD site are listed in Table 1 of the PSVP (RMT, 2008).

# Table 14. Historical VOC Concentrations at US-03D 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

D.J.	Concentrations (µg/L)				
Date	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride		
Site-Wide Groundwater Protection Standard	70 μg/L	100 μg/L	2 μg/L		
May 1993 <sup>(1)</sup>	11 (total 1,2-di	ichloroethenes)	28		
March 1994 <sup>(1)</sup>	18 (total 1,2-di	ichloroethenes)	35		
February 2000	120	27	19		
March 2000	120	25	19		
February 2002	150 D	38 D	15		
May 2002	180	44	16 J		
August 2002	200	44	11 J		
November 2002 <sup>(2)</sup>	170/180	43/46	18 J/17 J		
February 2003	180	42	15 J		
May 2003	170	41	13 J		
August 2003	200	51	17 J		
November 2003	170	45	14 J		
February 2004	180 D	52	14 J		
May 2004	210	55	14 J		
August 2004	180	43	11 J		
November 2004	200	54	16 J		
February 2005	200	50	12 J		
May 2005	210 D	55 D J	10		
August 2005	200	42	14 J		
November 2005	220	55	14 J		
February 2006	240	61	20		
May 2006	220 D	66	22		
July 2006	250	56	18 J		
October 2006	270 D	68	26		
April 2007	280	72	30 J		
October 2007	270	67	29 J		
April 2008	260	56	29 J		
October 2008	270 D	65 D	29 D J		
April 2009	220 D	52 D	23 D		
October 2009	280	66	28		
April 2010	220	51	26		
October 2010	260 E	57	28		
April 2011	290 D	57	34		
October 2011	260 D	56	35		
April 2012	310	66	39		
October 2012	300	65	38		
April 2013	300	54	42		
October 2013	270	47	33		

# Table 14. Historical VOC Concentrations at US-03D 2019 Annual Report HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Date	Concentrations (µg/L)				
Date	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride		
Site-Wide Groundwater Protection Standard	70 μg/L	100 μg/L	2 μg/L		
April 2014	240	45	35		
October 2014	260	48	40		
April 2015	260	47	42		
October 2015	250	44	41		
May 2016	280	48	67		
June 2016	240	41	46		
October 2016	210	34	46		
May 2017	210	31	48		
October 2017 <sup>(2)</sup>	260 D/260 D	41/41	55/55		
May 2018	270 D	37	61		
October 2018	260 D	44	62		
May 2019	290	39	66		
November 2019 <sup>(2)</sup>	260 E/260	33/34	69/68		

### Abbreviations:

µg/L = micrograms per liter

### Notes:

J = Estimated concentration

D = Analyte value is from a diluted analysis

E = Concentration exceeds calibration limit and therefore is semi-qualitative.

### Superscript Description:

(1) Concentrations reported in the RI/FS (Montgomery Watson, 1997).

 Created by: MOB
 Date: 2/13/2012

 Last revised by: ZTW
 Date: 12/20/2019

 Checked by: CB
 Date: 12/20/2019

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 14 - Historical VOC Concentrations

 $<sup>^{(2)}</sup>$  Multiple concentrations indicate the sample was analyzed as a duplicate or re-analyzed by the

# Table 15. Natural Attenuation Geochemical Parameters in DSGA Well US-03D 2019 Annual Report

### HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Analysis	Interpretation	PDI Result	2019 Resu	ılts US-05D	2019 Resu	Its US-03D
Analysis	interpretation	PDI Result	May	November	May	November
Dissolved Oxygen	<0.5 mg/L most conducive; >5 mg/L not tolerated by anaerobic organisms	≤1 mg/L	3.62 mg/L	4.53 mg/L	0.46 mg/L	3.71 mg/L
Nitrate (Dissolved)	<1 mg/L indicative of no competition between nitrate and the reductive pathway	<0.05 mg/L	< 0.02 mg/L	< 0.02 mg/L	< 0.02 mg/L	< 0.02 mg/L
Iron (II) (Dissolved)	>1 mg/L supportive of reductive pathway	>3 mg/L	< 0.1 mg/L	< 0.1 mg/L	2.88 mg/L	2.82 mg/L
Sulfate (Dissolved)	>20 mg/L suggestive of competition with reductive pathway	>40 mg/L	66.5 mg/L	66.7 mg/L	53.2 mg/L	53.5 mg/L
Methane	>0.5 mg/L indicative of strongly reducing conditions conducive to reductive pathway	0.32 mg/L	< 0.008 mg/L	< 0.008 mg/L	0.057 mg/L	0.052 mg/L
Redox Potential	<-100 mV makes the reductive pathway likely	-43 to -98 mV	126.8 mV	58.4 mV	-122.3 mV	-5.4 mV
На	5 to 9 SU is optimal range for reductive pathway	7.1 to 7.4 SU	7.21 SU	8.02 SU	7.32 SU	7.31 SU
Total Organic Carbon	>1 mg/L provides the energy needed by microbes to live	2 mg/L	1.2 mg/L	< 1.0 mg/L	1.4 mg/L	< 1.0 mg/L

Abbreviations:

SU = Standard units mg/L = milligrams per liter DSGA = Deep sand and gravel aquifer

NA = Not analyzed mV = millivolts PDI = Predesign investigation results (RMT, 2000)

#### Notes:

1) Groundwater samples were collected by EMT on May 6, 2019 at US-05D and May 7, 2019 at US-03D (first semi-annual monitoring event) and on November 5, 2019 (second semi-annual monitoring event).

2) Results from monitoring well US-05D, northwest of the landfill, are used for background comparisons.

 Created by: MOB
 Date: 2/13/2012

 Last revision by: ZTW
 Date: 1/7/2020

 Checked by: LMH
 Date: 2/28/2020

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 15 - Natural Attenuation Geochemical Parameter in DSGA Well US-03D.xls]Table 15

# Table 16. Surface Water Level Measurements - First Semi-annual Monitoring Event 2019 Annual Report

HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Surface Water Level Measurement Point	3.0-Foot Staff Gauge Reference Elevation (FAMSL) <sup>(1)</sup>	Staff Gauge Reading (feet) <sup>(2)</sup>	Surface Water Elevation (FAMSL) <sup>(3)</sup>	Date of Surface Water Level Measurement
SW-01	765.87	1.54	764.41	May 6, 2019
SW-02	762.45	2.56	762.01	May 6, 2019

### Abbreviations:

FAMSL = feet above mean sea level

#### Notes:

1) Staff gauge readings were recorded by Environmental Monitoring and Technologies, Inc.

### Superscript Description:

- (1) The reference elevation is the elevation (FAMSL) at the 3.0-foot mark on the staff gauge.
- (2) The staff gauge reading is the direct reading in feet above the 0.0-foot mark on the staff gauge.
- (3) The stream stage elevation is calculated by subtracting the difference (between the staff gauge reading and the staff gauge length) from the reference elevation.

 Created by: MOB
 Date: 2/13/2012

 Last revision by: ZTW
 Date: 12/20/2019

 Checked by: CB
 Date: 12/20/2019

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 16 - Surface Water Level Measurements - 1st Event.xls]Table 16

# Table 17. Surface Water Level Measurements - Second Semi-annual Monitoring Event 2019 Annual Report

HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Surface Water Level Measurement Point	3.0-Foot Staff Gauge Reference Elevation (FAMSL) (1)	Staff Gauge Reading (feet) <sup>(2)</sup>	Surface Water Elevation (FAMSL) <sup>(3)</sup>	Date of Surface Water Level Measurement Attempts
SW-01	765.87	1.42	764.29	November 5, 2019
SW-02	762.45	2.02	761.47	November 5, 2019

### Abbreviations:

FAMSL = feet above mean sea level

### Notes:

1) Staff gauge readings were recorded by Environmental Monitoring and Technologies, Inc.

### Superscript Description:

- (1) The reference elevation is the elevation (FAMSL) at the 3.0-foot mark on the staff gauge.
- (2) The staff gauge reading is the direct reading in feet above the 0.0-foot mark on the staff gauge.
- (3) The stream stage elevation is calculated by subtracting the difference (between the staff gauge reading and the staff gauge length) from the reference elevation.

Created by: MOB	Date: 2/13/2012
Last revision by: ZTW	Date: 12/20/2020
Checked by: CB	Date: 12/20/2020

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 17 - Surface Water Level Measurements - 2nd

### Table 18. Quantified Parameters for the Field Duplicate Pairs 2019 Annual Report

### HOD Landfill - Antioch, Illinois / SCS Engineers Project #25212005.00

Second Semi-annual Monitoring Event (November 2019)						
Parameter	RL	Units	US-04D	DUP	RPD	
Ammonia	0.1	mg/L as N	0.86	0.87	1.2	
Total Kjeldahl Nitrogen	0.15	mg/L as N	1	0.84	16.0	
Calcium, Dissolved	5000	μg/L	32800	32400	1.2	
Chloride, Dissolved	1	mg/L	26.5	25.2	4.9	
Sulfate	3	mg/L	49.4	44.7	9.5	
Sulfate, Dissolved	3	mg/L	50.6	49.1	3.0	
Alkalinity, Total	10	mg/L	203	206	1.5	
Calcium and Magnesium Hardness, Dissolved	500	μg/L	175000	170000	2.9	
Total Dissolved Solids Field Filtered	5	mg/L	309	294	4.9	
Orthophosphate	0.02	mg/L as P	0.33	0.32	3.0	

Parameter	RL	Units	SW-01	DUP	RPD
Total Recoverable Phenolics	0.005	mg/L	0.0092	0.0075	18.5
Calcium	5000	μg/L	41500	41200	0.7
Magnesium	5000	μg/L	21700	21600	0.5
Chloride	1	mg/L	63.4	62.9	0.8
Calcium and Magnesium Hardness	500	μg/L	193000	192000	0.5
Total Dissolved Solids	5	mg/L	278	312	12.2

Parameter	RL	Units	US-06S	DUP	RPD
Calcium, Dissolved	5000	μg/L	107000	107000	0.0
Iron, Dissolved	100	μg/L	4110	4120	0.2
Magnesium, Dissolved	5000	μg/L	46800	46900	0.2
Manganese, Dissolved	5	μg/L	90.8	91	0.2
Chloride, Dissolved	1	mg/L	129	131	1.6
Calcium and Magnesium Hardness, Dissolved	500	μg/L	460000	461000	0.2
Total Dissolved Solids Field Filtered	5	mg/L	566	569	0.5

Abbreviations: RL = Reporting Limit

μg/L = micrograms per liter RPD = Relative Percent Difference mg/L as N = milligrams per liter as Nitrogen DUP = Duplicate mg/L as P = milligrams per liter as Phosphorus

### Notes:

1) RPD calculated for all parameters where one or both results are greater than or equal to the reporting limit. Compounds with both results less than the reporting limit are not included in this table.

mg/L = milligrams per liter

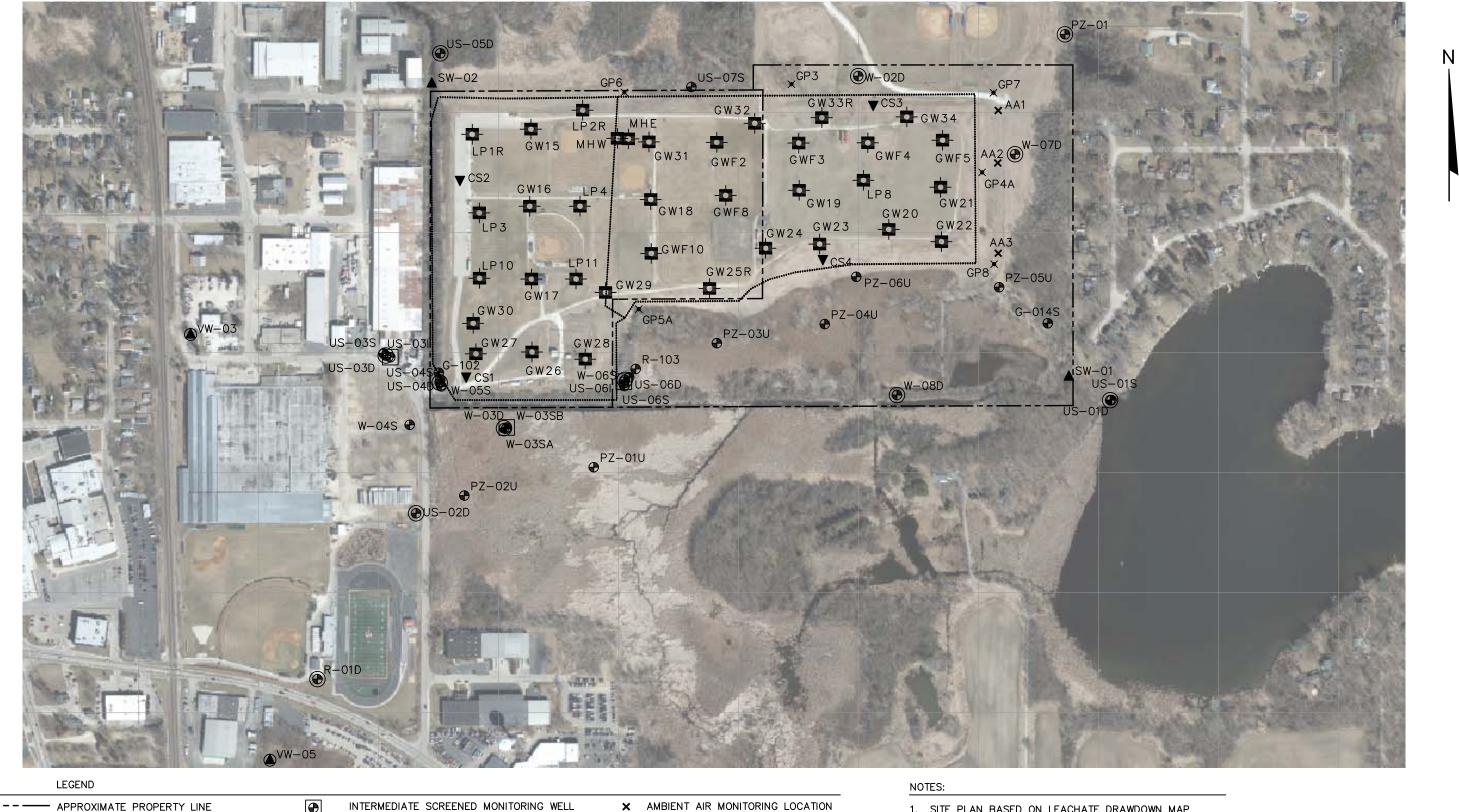
2) RPD greater than 15 percent and results greater than five times the reporting limit indicated in bold and discussed in the text.

Created by: MOB Date: 2/13/2012 Last revised by: <u>ZTW</u> Date: 1/15/2020 Checked by: NDK Date: 3/12/2020

Z:\Projects\25212005.00\Reports\2019\Annual Report\Tables\[Table 18 - Detected Parameters for the Blind Duplicate Pairs.xls]Table 18

# **Figures**

- 1 Site Plan
- 2 Difference in Leachate Elevation October 2019
- 3 Potentiometric Surface Map May 2019
- 4 Potentiometric Surface Map November 2019



- APPROXIMATE PROPERTY LINE

•••••• APPROXIMATE LIMITS OF WASTE

GAS AND LEACHATE EXTRACTION WELL

GAS MONITORING PROBE

DEEP SAND AND GRAVEL MONITORING WELL

PROJECT NO. 25212005.00 DRAWN BY: KP/BSS DRAWN: 03/17/2020 CHECKED BY: RRJ REVISED: 03/17/2020 APPROVED BY: ZTW

INTERMEDIATE SCREENED MONITORING WELL

SHALLOW SAND AND GRAVEL MONITORING WELL

SURFACE WATER MONITORING LOCATION

VILLAGE WATER SUPPLY WELL

CONDENSATE SUMP

SCS ENGINEERS

2830 DAIRY DRIVE MADISON, WI 53718-6751

PHONE: (608) 224-2830



WASTE MANAGEMENT, INC. ENVIRONMENTAL LEGACY MANAGEMENT GROUP MENOMONEE FALLS, W

HOD LANDFILL

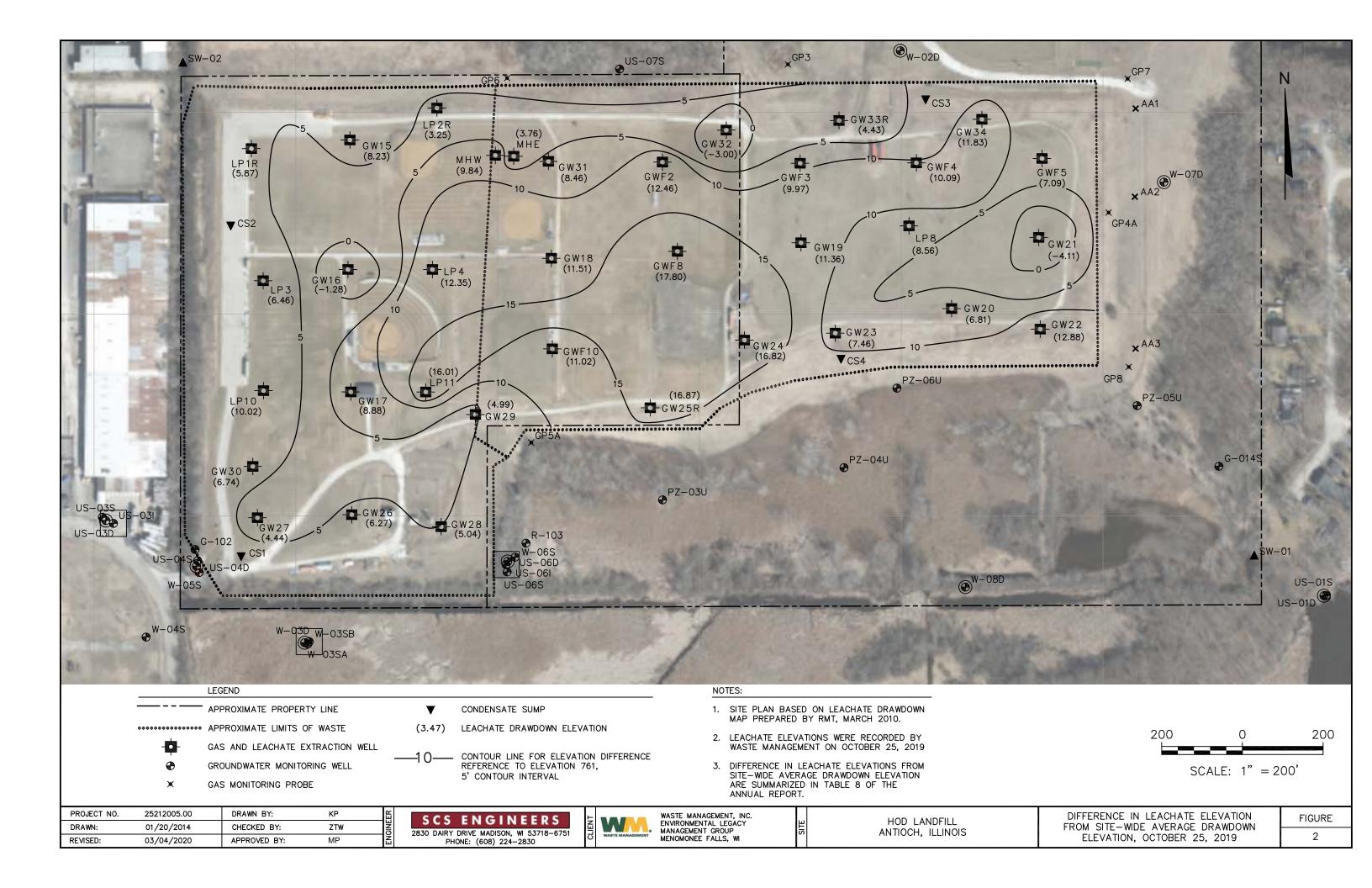
**FIGURE** SITE PLAN 1

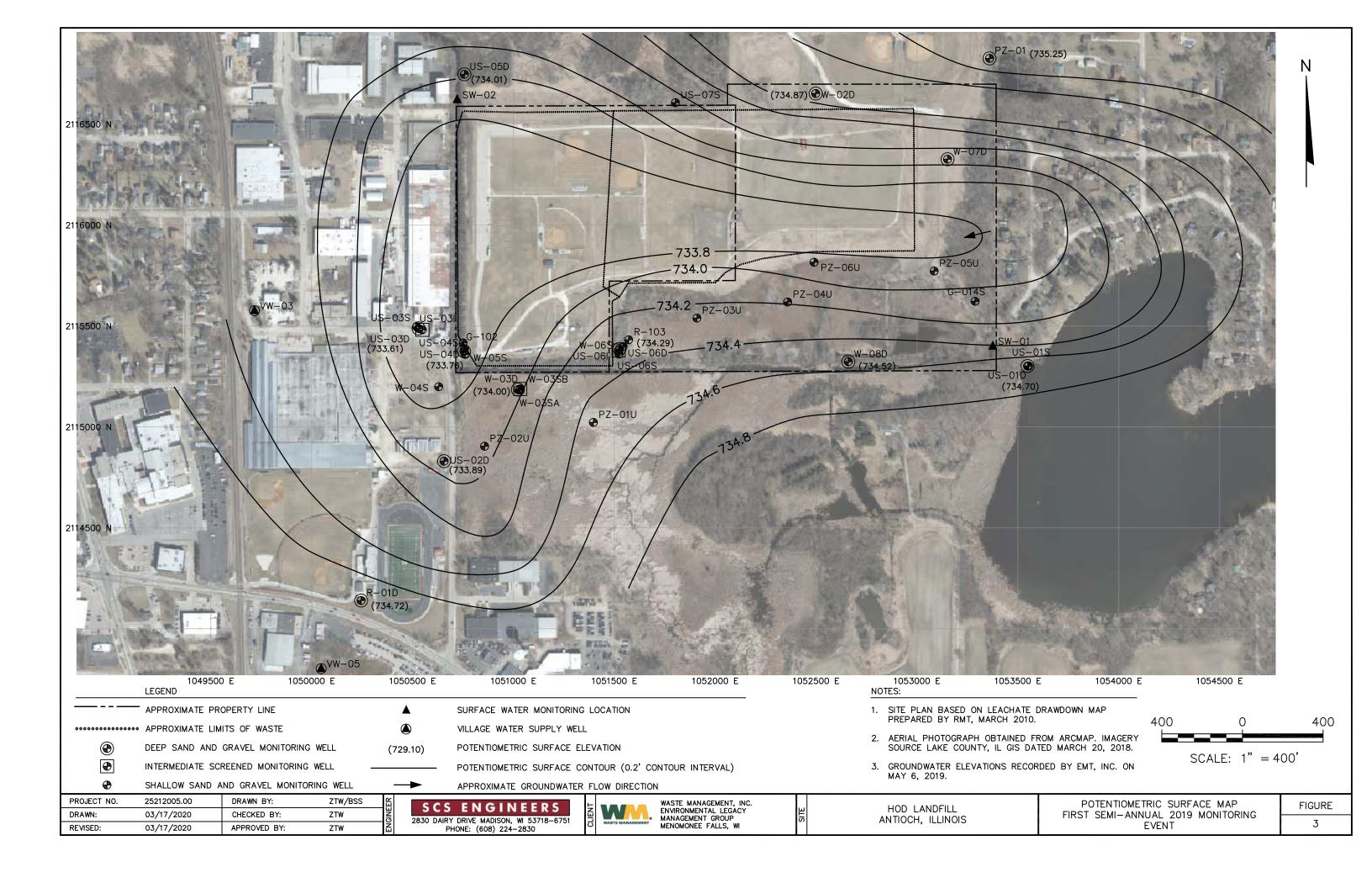
SCALE: 1" = 400'

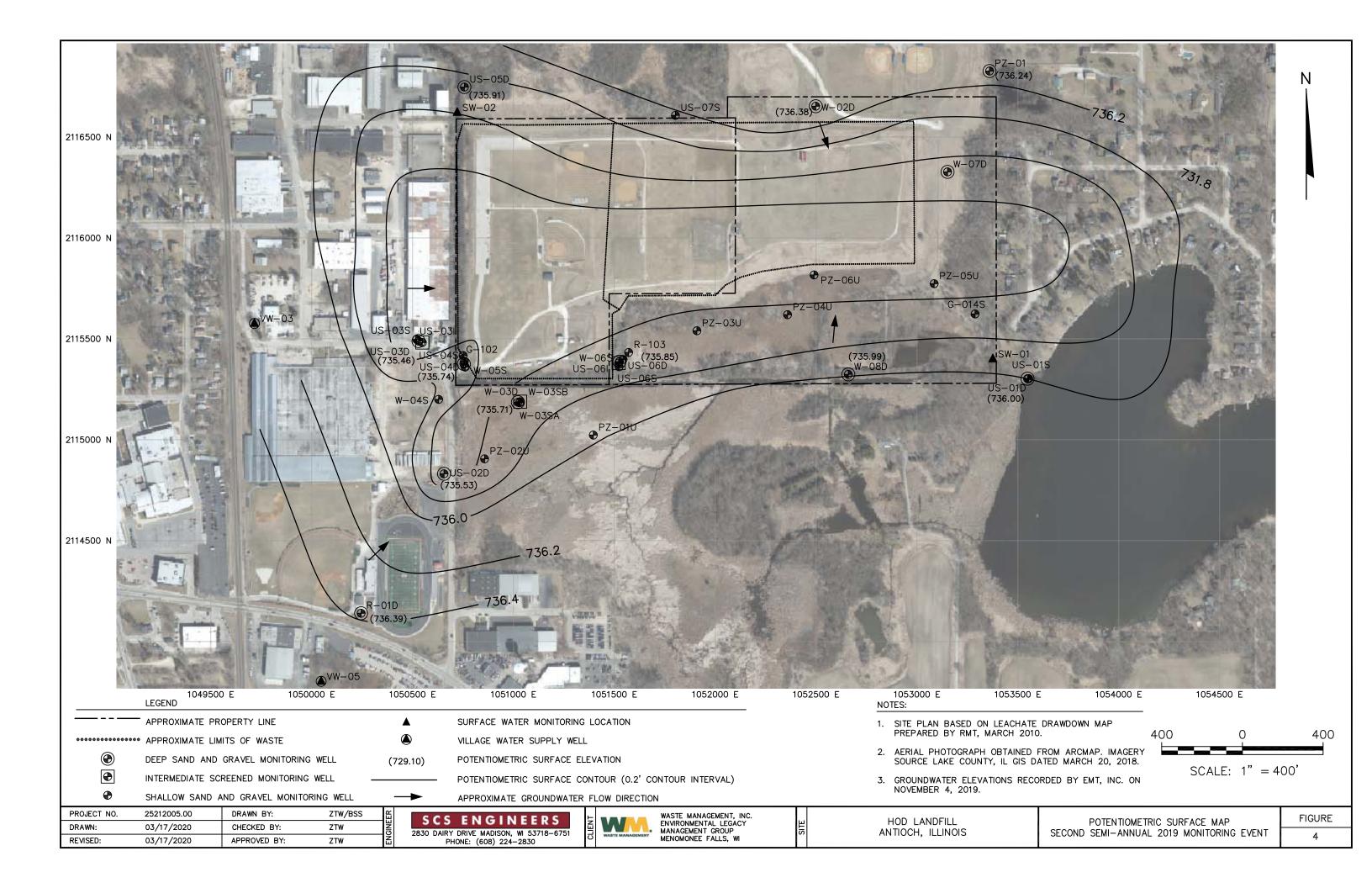
400

- 1. SITE PLAN BASED ON LEACHATE DRAWDOWN MAP PREPARED BY RMT, MARCH 2010.
- 2. AERIAL PHOTOGRAPH OBTAINED FROM ARCMAP. IMAGERY SOURCE LAKE COUNTY, IL GIS DATED MARCH 20, 2018.
- 3. MONITORING WELLS W-07D, R-103, AND US-07S RETAINED FOR FUTURE USE, IF NECESSARY.

ANTIOCH, ILLINOIS







# Appendix A

Monthly Inspection and Maintenance Reports – Second 2019 Semi-annual Period (July – December)

### Landfill Gas/Leachate Monitoring HOD Landfill Antioch, Illinois

Person sampling:	lick Carriker	Date: 7/22/19	Notes:
Ambient temperature	70	ob	
Barometric pressure:	29,34	in. Hg	
Trend in barometric pr	essure:		
Weather conditions:	Sunky	<del></del>	
Ground conditions:	Dry		
Gas/O <sub>2</sub> meter model:	ENVISION Serial #	1803203B	
Date last calibrated:	7/22/19		8-

BLOWER/FLARE DATA					
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS			
Flow rate (scfm)	148.6	NA			
Combustion temperature (°F)	991				
Blower inlet pressure (in H <sub>2</sub> O)	~54,3				
Blower outlet pressure (in H <sub>2</sub> O)	19,4				
Blower building valve setting	AU				
Gas inlet temperature (°F)	72				
% CH4	36.9				
% CO <sub>2</sub>	4.7				
% O <sub>2</sub>	9.0				
% Balance gas	45.4				

Leachate tank level	2,03	Feet
Pump operation (hours)	NA	Hours
Leachate pumped (gallons)		_ Total gallons
Compressor pressure	99	PSI
Compressor temperature	206	_ or
Notes:		160
	<u> </u>	

## Facility Inspection Report HOD Landfill Antioch, Illinois

Weath	er: Sunny	Tempera	Temperature: 10		
Groun	d Conditions:				
ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance		
Final (	Cover				
1.	Vegetation				
2.	Erosion	🔯			
3.	Burrowing	<b>½</b>			
4.	Settlement	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
5.	Leachate seeps				
6.	Other				
Acces	s Road	_			
1.	Accessibility	1			
2.	Other				

Sheet 2 of 4 Project No. HOP Prepared by: Nick Date: 1/12/19

Groun	dwater Wells/Gas Probes		
dete a mi be in cond	cribe below (see next page) the nature of any damage, crioration, or vandalism observed and required maintenance. At inimum, the following components of each well and probe shall inspected: (1) protective casing; (2) well stick-up, cap, and ditions inside protective casing; (3) surface seal; (4) well LD. label; ocks.		_
1.	Identify well/probe number and problems observed, if any.	X	
<u>Extrac</u>	tion Wells/Condensate Sumps		
leak sett inte van	pect well assemblies for loose bolts, cracks in pipes, air or liquid as in pipes, broken valve controls, evidence of differential lement (such as stretching of the flex hose), or other evidence of grity failure. Describe the nature of any damage, deterioration, or dalism observed and required maintenance. Identify the raction well number for problems observed, if any.		
1.	Differential settlement	Ø	
2.	Hardware, locks, pipes, and valves	Ø	
3.	Pump/Sump	Ø	
4.	Leaks	Ø	
5.	Other		
Extra	ction System Piping	-	21.570
1,	Header isolation valves	X	

	94	Project No	by Nick
2.	Condensate surging	<b>A</b>	
3.	Settlement	Ø	
4.	Other		
<u>Comp</u>	ressor Facility Piping, fittings, valves, and seals	M	
		×	<u> </u>
2.	Compressor	4	
3.	Air dryer	₹ <b>Z</b>	
4.	Exhaust fan	K	
5.	Gas sensor	×	
6.	Other		
Blowe	er Facility		
1/3	Piping, fittings, valves, seals	×	
2.	Blower	A	
3.	Exhaust fan	×	

Sheet H of H Project No. HOP Prepared by: Nick Date: 7/22/19

4.	Gas sensor	<b>₩</b>	
5.	Other		
Flare 1.	Flame arrestor	M	
2.	Igniter	×	
3.	Installation	囟	
4.	Solenoids	<b>M</b>	
5.	Other		
Fenci 1.	ng and Signs Fencing		
2.	Gates and locks	Ø.	
3.	Signs	M	
4.	Other		

### Landfill Gas/Leachate Monitoring HOD Landfill Antioch, Illinois

Person sampling:	Nick Carriker	Date: 8/22/19	Notes:	
Ambient temperatu	73	ok		 
Barometric pressure	29.30	in-Hg		
Trend in barometric	pressure:			 
Weather conditions:	Sunny			N
Ground conditions:	DY			
Gas/O <sub>2</sub> meter mode	Envision Serial #:	18032038		
Date last calibrated:	8/22/19			- 0

BL	OWER/FLARE DATA	
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS
Flow rate (scfm)	147.5	NA
Combustion temperature (°F)	1001	
Blower inlet pressure (in H <sub>2</sub> O)	-55,6	
Blower outlet pressure (in H <sub>2</sub> O)	20.8	
Blower building valve setting	NA	
Gas inlet temperature (°F)	72	
₩ CH4	25.2	
% CO₂	4.1	
% O <sub>2</sub>	10.8	-
% Balance gas	59.9	

eachate tank level	9,01	Feet
ump operation (hours)	NA	Hours
Leachate pumped (gallons)		Total gallons
Compressor pressure	125	_ PSI
Compressor temperature	215	⊸°F
Notes:		
***************************************		

Sheet \_\_\_\_ of \_\_\_ Project No. \_HOD Prepared by: Nick Date: \_G/22//9

## Facility Inspection Report HOD Landfill Antioch, Illinois

Weather: Sunky		Temperature: 73		
Grour	nd Conditions: DCY			
ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance	
<u>Final</u>	Cover			
1.	Vegetation			
2.	Erosion			
3.	Burrowing	45		
4.	Settlement	_ 🎾		
5.	Leachate seeps			
6.	Other			
Acces	s Road			
1,4	Accessibility			
2.	Other	800		

Sheet 2 of 4 Project No. HOD Prepared by: Nick Date: 8/22/19

# Groundwater Wells/Gas Probes Describe below (see next page) the nature of any damage, deterioration, or vandalism observed and required maintenance. At a minimum, the following components of each well and probe shall be inspected: (1) protective casing; (2) well stick-up, cap, and conditions inside protective casing; (3) surface seal; (4) well I.D. label; (5) locks. X Identify well/probe number and problems observed, if any. **Extraction Wells/Condensate Sumps** Inspect well assemblies for loose bolts, cracks in pipes, air or liquid leaks in pipes, broken valve controls, evidence of differential settlement (such as stretching of the flex hose), or other evidence of integrity failure. Describe the nature of any damage, deterioration, or vandalism observed and required maintenance. Identify the extraction well number for problems observed, if any. Z Differential settlement \_\_\_\_\_\_ X П 2. Hardware, locks, pipes, and valves Pump/Sump χ 3. Ž. Leaks 5. **Extraction System Piping** X Header isolation valves \_\_\_\_\_

Sheet 3 of 4 Project No. HOD Prepared by: Nick Date: 8/22/8

2.	Condensate surging	K	
3.	Settlement	Ø	
4.	Other		
<u>Comp</u>	ressor Facility Piping, fittings, valves, and seals	×	
2.	Compressor	<b>⊠</b>	
3.	Air dryer	×	
4.	Exhaust fan	×	
5.	Gas sensor	×	
6.	Other		
Blower 1.	er Facility Piping, fittings, valves, seals	<b>☆</b>	
2.	Blower	P	
3.	Exhaust fan	×	

Sheet 4 of 4 Project No. HOD Prepared by: Nick Date: 8/11/19

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### Landfill Gas/Leachate Monitoring HOD Landfill Antioch, Illinois

Weather:	Cloudy	Temperature: _	66 <b>°</b> F	Technician:	Nickolas Carriker	Date: 9/26/2019	
Barometric pressure:	29.43	Trend:		Notes:			
Ground conditions:	Damp	<u></u>					
Gas/O2 meter model:	Envision	Serial #: 1803203B					
Date last calibrated:	09/26/2019						

	BLOWER/FL	ARE SYSTEM	GAS-TO-ENE	RGY SYSTEM	LEACHATE LOADOUT AND ADDITIONAL BLOWER/FLARE DATA	
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS	INITIAL READINGS	POST ADJUSTMENTS	Leachate tank level	8.98 Feet
Status (on/off)	ON	ON	NA	NA	Pump operation (hours)	NA Hours
Flow rate (cfm)	NA	101.2	NA	NA	Compressor pressure	124 psi
Combustion temperature (°F)	NA	997	NA	NA	Compressor temperature	214 °F
Inlet pressure (in w.c.)	NA	-39.6	NA	NA	Blower operation (hours)	NA Hours
Outlet pressure (in w.c.)	NA	20.6	NA	NA		
Blower building valve setting	NA	NA	NA	NA		
Gas inlet temperature (°F)	NA	67	NA_	NA	Notes:	<u> </u>
% CH4	NA	25,6	NA	NA		
% CO2	NA	11.8	NA	NA		
% O2	NA	8.6	NA	NA		
% Balance	NA	54.0	NA	NA_		<u> </u>

Sheet \_\_\_\_ of \_\_\_ Project No. \_\_\_\_ HOD \_\_\_ Prepared by: Nick \_\_\_\_ Date: 9 \_\_\_\_ 19

## Facility Inspection Report HOD Landfill Antioch, Illinois

Weather: Cloudy		Temperature: 66		
Groun	d Conditions:			
ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance	
Final (	Cover			
1.	Vegetation	/		
2.	Erosion			
3.	Burrowing	<b>\times</b>		
4.	Settlement	🖂		
5.	Leachate seeps	🗷		
6.	Other			
Acces	s Road			
1.	Accessibility	1.5	64776	
2.	Other			

Sheet 2 of 4
Project No. HOP
Prepared by: Nick
Date: 9/20/19

### Groundwater Wells/Gas Probes

Describe below (see next page) the nature of any damage,
deterioration, or vandalism observed and required maintenance. At
a minimum, the following components of each well and probe shall
be inspected: (1) protective casing; (2) well stick-up, cap, and
conditions inside protective casing; (3) surface seal; (4) well I.D. label;
(5) locks.

(5) l	ocks.	1460	
1.	Identify well/probe number and problems observed, if any.	X	
Extrac	tion Wells/Condensate Sumps		
leak sett inte van	pect well assemblies for loose bolts, cracks in pipes, air or liquid as in pipes, broken valve controls, evidence of differential lement (such as stretching of the flex hose), or other evidence of egrity failure. Describe the nature of any damage, deterioration, or idalism observed and required maintenance. Identify the raction well number for problems observed, if any.		
1.	Differential settlement	X	
2.	Hardware, locks, pipes, and valves	×	
3.	Pump/Sump	150	
4.	Leaks	M	
5.	Other		
Extrac	ction System Piping	¥	_
1,	Header isolation valves	N.	

Sheet 3 of 4
Project No. HOD
Prepared by: Nick
Date: 9/26/19

2.	Condensate surging	₩.	
3.	Settlement	×	
4.	Other		
<u>Comp</u>	ressor Facility		
1.	Piping, fittings, valves, and seals	<b>X</b>	
2.	Compressor	<b>⋈</b>	
3.	Air dryer	赵	
4.	Exhaust fan	Ø	
5.	Gas sensor	[4]	
6.	Other		
Blow	er Facility	12	_
1.	Piping, fittings, valves, seals	X	
2.	Blower	×	
3.	Exhaust fan	B	

		Project N	o. HOD by: Nick
4.	Gas sensor	×	
5.	Other		
Flare 1.	Flame arrestor	Ø	
2.	Igniter	Ø	
3.	Installation	M	
4.	Solenoids	A	
5.	Other		
Fencii	ng and Signs Fencing	Ø	
2.	Gates and locks	Ø	
3.	Signs	×	
4.	Other		

FOR CONTRACTOR OF THE PROPERTY OF THE PROPERTY

Weather:	Cloudy	Temperature:	57	°F	Technician:	Nickolas Carriker	Date: 10/18/2019
Barometric pressure:	29.71	Trend:			Notes:		
Ground conditions:	WET						
Gas/O2 meter model:	Envision	Serial #: 1803203B					
Date last calibrated:	10/18/2019						

	BLOWER/FLARE SYSTEM		GAS-TO-ENERGY SYSTEM		LEACHATE LOADOUT AND ADDITIONAL BLOWER/FLARE DATA	
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS	INITIAL READINGS	POST ADJUSTMENTS	Leachate tank level	8.91 Feet
Status (on/off)	ON	ON	NA	NA	Pump operation (hours)	NA Hours
Flow rate (cfm)	NA	114.3	NA	NA	Compressor pressure	104 psi
Combustion temperature (°F)	NA	897	NA	NA	Compressor temperature	219 °F
inlet pressure (in w.c.)	NA NA	-38.6	NA	NA	Blower operation (hours)	NA Hours
Outlet pressure (in w.c.)	NA_	20.1	NA	NA	E)	<del></del>
Blower building valve setting	NA NA	NA	NA	NA	:	
Gas inlet temperature (°F)	NA	68	NA	NA	Notes:	
% CH4	NA	27.3	NA	NA		
% CO2	NA	14.1	NA	NA		
% O2	NA	8.9	NA	NA		
% Balance	NA	49.7	NA	NA		<u> </u>

Sheet of Hop Project No. HOP Prepared by: Nick Date: 10/18/19

# Facility Inspection Report HOD Landfill Antioch, Illinois

Weather: Cloudy		Tempera	Temperature: 5	
Groun ITEM	d Conditions:COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance	
Final (	Cover			
1.	Vegetation	\ <u>&gt;</u>		
2.	Erosion	_		
3.	Burrowing			
4.	Settlement			
5.	Leachate seeps			
6.	Other			
Acces	s Road	_		
1::	Accessibility	<u>\$</u>		
2.	Other			

Sheet 2 of 4 Project No. HOP Prepared by: Nick Date: 10/19/19

Groun	dwater Wells/Gas Probes		
dete a m be i con	cribe below (see next page) the nature of any damage, erioration, or vandalism observed and required maintenance. At inimum, the following components of each well and probe shall inspected: (1) protective casing; (2) well stick-up, cap, and ditions inside protective casing; (3) surface seal; (4) well I.D. label; locks.  Identify well/probe number and problems observed, if any.	₽	
Extrac	tion Wells/Condensate Sumps		
leak sett inte van	pect well assemblies for loose bolts, cracks in pipes, air or liquid as in pipes, broken valve controls, evidence of differential dement (such as stretching of the flex hose), or other evidence of egrity failure. Describe the nature of any damage, deterioration, or idalism observed and required maintenance. Identify the raction well number for problems observed, if any.		
1.	Differential settlement	$\boxtimes$	
2.	Hardware, locks, pipes, and valves	凩	
3.	Pump/Sump	Ø	
4.	Leaks	*	
5.	Other		
F .			
<u>Extrac</u>	ction System Piping  Header isolation valves	X	

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2.	Condensate surging	×	
3.	Settlement	內	
4.	Other		
Comp	ressor Facility		
1.	Piping, fittings, valves, and seals	Ø	
2.	Compressor	ĆΣO	
3.	Air dryer	<b>⋈</b>	
4.	Exhaust fan	区	
5.	Gas sensor	<sub>[X]</sub>	
6.	Other		
Blow 1	er Facility Piping, fittings, valves, seals	Ø	
Liej	riping, ritings, varves, sears	4	
2.	Blower	<u>≥</u>	
3.	Exhaust fan	K	

Sheet  $\frac{H}{H}$  of  $\frac{H}{H}$  Project No.  $\frac{HOD}{Prepared}$  by:  $\frac{NiCK}{M}$  Date:  $\frac{10}{18}/19$ 

4.	Gas sensor	Ø.	
5.	Other		
<u>Flare</u> 1.	Flame arrestor	X	
2.	Igniter	X	
3.	Installation	<b>☆</b>	
4.	Solenoids	×	
5.	Other		
Fenci	ng and Signs Fencing	Ø-	
2.	Gates and locks	7	
3.	Signs	A	
4.	Other		

Person sampling: Nick	Carriles n	ate: 11/12/19 N	Notes:	
Ambient temperature 14	entra con tra con a considera e procesa como de la constanta d	ok		
Barometric pressure 29,69		in. Hg		
Trend in barometric pressure:				
Weather conditions: Sunky				
Ground conditions: Dry				
Gas/On meter model: FaviSic		3203B		
Date last calibrated: 11/2/	19			

BLOWER/FLARE DATA				
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS		
Flow rate (scfm)	126.1			
Combustion temperature (°F)	1008			
Blower inlet pressure (in H <sub>2</sub> O)	-28.6			
Blower outlet pressure (in H <sub>2</sub> O)	18.7			
Blower building valve setting	NA			
Gas inlet temperature (°F)	5			
% CH₄	11.9			
n <sub>4</sub> , €() <sub>2</sub>	2.6			
% O <sub>1</sub>	17.3			
% Balance gas	68.2			

Leachate tank level  Pump operation (hours)	9.02 NA	Feet Hours
Leachate pumped (gallons)		_ Total gallons
Compressor pressure	125	_ PSI
Compressor temperature	198	υĿ
Notes:		

Sheet \_\_\_\_ of \_\_\_ Project No. \_HOD Prepared by: Nick Date: \_\_\_\_/12 / 19

# Facility Inspection Report HOD Landfill Antioch, Illinois

Weather: Scany		Tempera	Temperature: 19		
Groun	d Conditions: Dry				
ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance		
Final (	Cover				
1.	Vegetation				
2.	Erosion	·			
3.	Burrowing				
4.	Settlement	Ø.			
ō.	Leachate seeps				
6.	Other				
Acces	s Road	=			
15	Accessibility	-			
2.	Other	200			

Sheet 2 of 4 Project No. HOD Prepared by: Nick Date: 1/12/19

Groun	dwater Wells/Gas Probes		
dete a m be i con	cribe below (see next page) the nature of any damage, erioration, or vandalism observed and required maintenance. At inimum, the following components of each well and probe shall inspected: (1) protective casing; (2) well stick-up, cap, and ditions inside protective casing; (3) surface seal; (4) well I.D. label; locks.		
1.	Identify well/probe number and problems observed, if any.	A	
Extrac	tion Wells/Condensate Sumps		
leal sett inte van	pect well assemblies for loose bolts, cracks in pipes, air or liquid as in pipes, broken valve controls, evidence of differential lement (such as stretching of the flex hose), or other evidence of egrity failure. Describe the nature of any damage, deterioration, or idalism observed and required maintenance. Identify the raction well number for problems observed, if any.		
1.	Differential settlement	X	
		280	
2.	Hardware, locks, pipes, and valves	K	
		-	_
3.	Pump/Sump	X	
		-	_
4.	Leaks	23	
5.	Other	Ц	
<u>Extra</u>	ction System Piping		
$\mathbf{I}_{\tau_j}$	Header isolation valves	本	

Sheet 3 of 4 Project No. HOD Prepared by: Nick Date: 11/12/19

2.	Condensate surging	M	
3.	Settlement	<b>X</b>	
4.	Other	0	
<u>Comp</u>	ressor Facility Piping, fittings, valves, and seals	×	
2.	Compressor	<b>□</b>	
3.	Air dryer	Ø	
4.	Exhaust fan	<b>(2</b> )	
5.	Gas sensor	囟	
6.	Other		
	er Facility Piping, fittings, valves, seals	124	
1.	riping, mungs, varves, sears	`	
2.	Blower	<b>\bar{\bar{\bar{\bar{\bar{\bar{\bar{</b>	
3.	Exhaust fan	M	

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Project No. HOD
Prepared by: Nick
Date: 11/12/19

100	Cias sensor	ſχ	Ļ
5.	Other		
Flare	Flame arrestor	Ø	
2.	Igniter	(A)	
3.	Installation	K	
4.	Solenoids	Ø	
5.	Other		
Fencial 1	ng and Signs Fencing	中	
2,	Gates and locks	R	
3.	Signs	×	
4.	Other		

Person sampling:	Vick Carrice Date 12/20/19	Notes:
Ambient temperature	37	·
Barometric pressure	29,67 in Hs	
Trend in barometric p	ressure;	
Weather conditions:	over Cast	
Ground conditions:	Dry	
Gas/O <sub>2</sub> meter model:	Envision Serial #: 1803203B	
Date last calibrated:	12/20/19	

BLOWER/FLARE DATA							
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS					
Flow rate (scfm)	145.6	NA					
Combustion temperature (°F)	1011						
Blower inlet pressure (in H <sub>2</sub> O)	~/1,1						
Blower outlet pressure (in H <sub>2</sub> O)	10.6						
Blower building valve setting	NA						
Gas inlet temperature (°F)	48						
% CH₄	17.3						
% C() <sub>1</sub>	4.5						
% O <sub>2</sub>	14.9						
% Balance gas	63.3						

Leachate tank level	9.01	Feet	
Pump operation (hours)	NA	Hours	
Leachate pumped (gallons)		Total gallons	
Compressor pressure	125	_ PSI	
Compressor temperature	196	_ °F	
Notes:	-2.79F	NOT	

Sheet \_\_\_\_ of \_\_\_ Project No. \_\_\_\_ HOD \_\_\_ Prepared by: Nick \_\_\_\_ Date: \_\_\_\_/19

# Facility Inspection Report HOD Landfill Antioch, Illinois

Weath	Weather: OverCost		Temperature: 31_		
Groun	nd Conditions:				
ITEM	COMMENTS/OBSERVATIONS	Adequate	Requires Maintenance		
<u>Final</u>	Cover				
1.	Vegetation	\\			
2.	Erosion				
3.	Burrowing	_ 🏻			
4.	Settlement	×			
5.	Leachate seeps				
6.	Other				
Acces	s Road	_			
Ĺ	Accessibility				
2.	Other				

Sheet 2 of 4 Project No. HOP Prepared by: Nick Date: 12/20/19

Ground	lwater Wells/Gas Probes		
deter a mi be in	ribe below (see next page) the nature of any damage, rioration, or vandalism observed and required maintenance. At nimum, the following components of each well and probe shall aspected: (1) protective casing; (2) well stick-up, cap, and litions inside protective casing; (3) surface seal; (4) well I.D. label; ocks.		
1.	Identify well/probe number and problems observed, if any.	Ø	
	ion Wells/Condensate Sumps		
leak settl integ vand	ect well assemblies for loose bolts, cracks in pipes, air or liquid in pipes, broken valve controls, evidence of differential ement (such as stretching of the flex hose), or other evidence of grity failure. Describe the nature of any damage, deterioration, or dalism observed and required maintenance. Identify the action well number for problems observed, if any.		
1.	Differential settlement	×	
2.	Hardware, locks, pipes, and valves	7	
3.	Pump/Sump	×	
4.	Leaks	Ø	
5.	Other		
Extrac	tion System Piping	-	_
I <sub>70</sub>	Header isolation valves	X	

Sheet 3 of 4 Project No. HOD Prepared by: Nick Date: 12/20/19

2.	Condensate surging	XI	
3.	Settlement	$\boxtimes$	
4.	Other		
-	ressor Facility	Œ	
1,	Piping, fittings, valves, and seals	ta.	L_J
2.	Compressor	Ø	
3.	Air dryer	×	
4.	Exhaust fan	<b>⊠</b>	
5.	Gas sensor	Ø	
6.	Other		
Rlow	er Facility		
1.	Piping, fittings, valves, seals	M	
2.	Blower	×	
3.	Exhaust fan	K	

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Gas sensor		l
Other		. Land
Flame arrestor	_ 🗵	[
Igniter	<b>\</b>	(
Installation	\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times_\times	[
Solenoids	🌣	
Other		
g and Signs Fencing	_	1
Gates and locks	(E) (E) (E)	
Signs		
Other		

# Appendix B

Quarterly Landfill Gas and Leachate Monitoring Data - 2019

Weather:	Overcast		Temperature:	56	°F	Technician:	Nickolas Carriker	Date: 03/28/2019	
Barometric pressure:	29.17	Trend:				Notes:			
Ground conditions:	Damp					_			
Gas/O <sub>2</sub> meter model:	GEM5000	Serial	#:						
Date last calibrated:	03/28/2019								

	BLOWER/FL	ARE SYSTEM	GAS-TO-ENE	RGY SYSTEM	LEACHATE LOADOU BLOWER/FI	T AND ADDITIONAL ARE DATA
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS	INITIAL READINGS	POST ADJUSTMENTS	Leachate tank level	
Status (on/off)	ON	ON	NA	NA	Pump operation (hours)	NA Hours
Flow rate (cfm)	NA	158	NA	NA	Compressor pressure	psi
Combustion temperature (°F)	NA	648	NA	NA	Compressor temperature	°F
Inlet pressure (in w.c.)	NA	-59.6	NA	NA	Blower operation (hours)	NA Hours
Outlet pressure (in w.c.)	NA	20.1	NA	NA		
Blower building valve setting	NA	NA	NA	NA		
Gas inlet temperature (°F)	NA	58	NA	NA	Notes:	
% CH <sub>4</sub>	NA	33.8	NA	NA		
% CO <sub>2</sub>	NA	11.7	NA	NA		
% O2	NA	10.4	NA	NA		
% Balance	NA	44.1	NA	NA		

### WELL FIELD DATA

		L-SIDE SURE <sup>(1)</sup>	HEADE PRESS		% CH4	% CO <sub>2</sub>	% O2	% BAL.	TEMP.		CE PLATE OP <sup>(1)</sup>		VE TURNS PPEN <sup>(1)</sup>	LEACHATE PUMP CYCLE #
LOCATION	I	P	I	P						I	P	I	P	
GWF-2	-53.7		-53.8		66.9	28.5	0.6	4.0	61					751342
GWF-3	-46.6		-48.9		62.4	28.8	1.4	7.4	56					228731
GWF-4	-51.7		-52.2		0.4	4.0	18.8	76.9	61					253705
GWF-5	-26.5		-53.0		0.2	0.4	19.0	80.4	62					NA
GWF-8	-46.8		-53.8		31.7	17.8	9.9	40.6	57	no orif	ice plate			4402
GWF-10	-52.3		-54.0		64.1	30.8	0.9	4.0	51	no orif	ice plate			966620
GW-15	-45.7		-51.5		32.0	8.1	11.7	48.2	60	no orif	ice plate			199779
GW-16	-48.4		-51.6		70.4	20.4	1.7	7.5	57					973451
GW-17	-48.7		-51.1		29.9	16.8	4.3	48.9	59	no orif	ice plate			401344
GW-18	-48.5		-51.9		50.7	28.9	2.1	18.3	54	no orif	ice plate			207
GW-19	-51.7		-55.1		7.9	12.7	15.2	64.3	55					590972
GW-20	-51.3		-52.5		70.6	27.3	0.5	1.5	59					209
GW-21	-51.3		-53.0		75.5	24.3	0.1	0.0	58	no orif	ice plate			419426
GW-22	-51.2		-52.3		3.6	8.8	15.6	72.0	55	no orif	ice plate			275096
GW-23	-50.1		-51.8		0.7	4.2	19.1	76.0	62					1091
GW-24	-46.0		-50.7		0.5	1.5	19.9	78.1	59	no orif	ice plate			763949
GW-25R	-6.4		-53.5		0.2	0.6	20.8	78.4	53	no orif	ice plate			33774
GW-26	-50.6		-51.9		0.7	0.2	20.6	78.4	56	no orif	ice plate			NA
GW-27	-30.1		-30.1		31.0	17.8	0.7	50.5	55	no orif	ice plate			824901

### WELL FIELD DATA

	WELL PRESS		HEADEI PRESS		% CH4	% CO <sub>2</sub>	% O2	% BAL.	темр.	ORIFICE PLATE DP <sup>(1)</sup>		VALVE TURNS OPEN <sup>(1)</sup>		LEACHATE PUMP CYCLE#
LOCATION	I	P	I	P						I	P	I	P	
GW-28	-45.5		-56.5		0	0.2	20.6	79.2	60	no orifi	ce plate			547026
GW-29	-51.3		-51.5		0.1	0.4	20.8	78.7	57	no orifi	ce plate			201410
GW-30	-13.6		-50.3		39.6	23.3	0.2	36.9	57	no orifi	ce plate			271734
GW-31	-48.6		-50.2		60.1	28.9	1.4	9.6	57	no orifi	ce plate			NA
GW-32	-47.1		-50.8		63.2	14.2	4.2	18.5	58	no orifi	ce plate			340232
GW-33	-43.0		-50.1		34.8	17.4	9.5	38.5	59					349
GW-34	-41.5		-42.2		1.1	1.0	19.3	78.6	63	no orifi	ce plate			710823
LP1R	-49.7		-51.1		3.2	2.9	18.9	74.9	58	no orifi	ce plate			28322
LP2R	-44.2		-51.3		13.6	6.6	16.0	63.8	53	no orifi	ce plate			441479
LP3	-48.3		-50.9		2.1	6.3	18.0	73.6	56					923485
LP4	-50.1		-52.0		61.3	13.6	4.7	20.3	61	no orifi	ce plate			601102
LP8	-51.4		-51.6		71.4	28.0	0.1	0.5	57					NA
LP10	-50.2		-50.4		10.0	10.7	15.5	63.8	54					514967
LP11	-0.7		-56.5		0.4	3.0	19.2	77.4	58	no orifi	ce plate			604506
МНЕ	-46.8		-51.2		45.5	13.8	7.9	32.8	52	no orifi	ce plate			42555
MHW	-0.4		-50.8		0.7	2.6	19.9	76.8	51	no orifi	ce plate			208

Notes: I = initial reading; P = post adjustment reading; NC = no change; NR = no reading

### GAS PROBE DATA

LOCATION	PRESSURE	% CH4	LEL CH4	% O2	% CO <sub>2</sub>	% BAL.
GP3 (2)	0	0	0	20.9	0	79.1
GP4A	0	0	0	20.9	0	79.1
GP5A	0	0	0	20.8	0.1	79.1
GP6	0	0	0	20.9	0	79.1
GP7	0	0	0	20.9	0	79.1
GP8	0	0	0	19.2	0.4	80.4
AA1 (1)	0	0	0	20.9	0	79.1
AA2 (1)	0	0	0	20.9	0	79.1
AA3 (1)	0	0	0	20.9	0	79.1

Notes: (1) Ambient air locations are monitored annually.

 $\sp(2)$  Gas probe well casing is above the protective casing. Cannot lock the well.

NA = Not Applicable

#### Condensate Sump Cycles

Conuci	nsate sump Cycles
CS-1:	NA
CS-2:	NA
CS-3	NA
CS-4	NA

Weather:	Partly Cloudy		Temperature:	46	°F	Technician:	Nick Carriker	Date: 05/14/2019	
Barometric pressure:	29.19	Trend:				Notes:			
Ground conditions:	wet								
Gas/O <sub>2</sub> meter model:	Envision	Serial	#: 1803203B						
Date last calibrated:	05/14/2019								

	BLOWER/FI	ARE SYSTEM	GAS-TO-ENE	RGY SYSTEM	LEACHATE LOADOUT AND ADDITIONAL BLOWER/FLARE DATA			
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS	INITIAL READINGS	POST ADJUSTMENTS	Leachate tank level	3.46 Feet		
Status (on/off)	ON	ON	NA	NA	Pump operation (hours)	NA Hours		
Flow rate (cfm)	NA	153.2	NA	NA	Compressor pressure	 111 psi		
Combustion temperature (°F)	NA	946	NA	NA	Compressor temperature	198 °F		
Inlet pressure (in w.c.)	NA	-47.1	NA	NA	Blower operation (hours)	NA Hours		
Outlet pressure (in w.c.)	NA	28.1	NA	NA	(,			
Blower building valve setting	NA	NA	NA	NA				
Gas inlet temperature (°F)	NA	52	NA	NA	Notes:			
% CH <sub>4</sub>	NA	38.5	NA	NA				
% CO <sub>2</sub>	NA	7.3	NA	NA				
% O <sub>2</sub>	NA	9.6	NA	NA				
% Balance	NA	44.6	NA	NA				

### WELL FIELD DATA

		L-SIDE SURE <sup>(1)</sup>	HEADE PRESS		% CH4	% CO <sub>2</sub>	% O2	% BAL.	ТЕМР.		CE PLATE DP <sup>(1)</sup>		VE TURNS OPEN <sup>(1)</sup>	LEACHATE PUMP CYCLE #
LOCATION	I	P	I	P						I	P	I	P	
GWF-2	-42.9		-42.9		53.6	20.4	5.9	20.1	51					751342
GWF-3	-2.9		-31.4		68.5	30.1	0.2	1.4	56					228731
GWF-4	-40.7		-40.7		0.3	0.4	20.5	78.7	48					253705
GWF-5	-1.3		-41.4		0.1	0.2	20.9	78.7	51					NA
GWF-8	-41.8		-42.0		25.2	11.7	9.3	53.8	52	no orif	fice plate			4402
GWF-10	-43.5		-45.0		60.0	30.1	1.3	8.4	51	no orif	fice plate			966620
GW-15	-38.3		-42.4		64.0	23.6	2.3	9.8	54	no orif	fice plate			199779
GW-16	-37.5		-40.9		73.2	20.8	0.3	5.7	54					973451
GW-17	-30.9		-39.5		31.3	22.7	2.7	43.4	51	no orif	ice plate			401351
GW-18	-42.5		-43.6		62.9	30.2	1.0	5.0	52	no orif	fice plate			207
GW-19	-34.9		-42.2		61.7	23.8	2.5	12.0	50					590972
GW-20	-42.5		-42.5		0.3	0.4	20.4	79.0	48					209
GW-21	-41.0		-41.1		69.1	28.4	0.4	2.1	51	no orif	fice plate			419426
GW-22	-34.8		-42.0		54.5	30.6	2.3	12.5	49	no orif	fice plate			275097
GW-23	-39.5		-43.0		28.9	12.0	11.7	47.4	51					2157
GW-24	-41.9		-42.0		59.9	25.3	2.3	11.6	53	no orif	fice plate			763949
GW-25R	-43.8		-45.3		32.5	13.2	10.5	43.5	42	no orif	fice plate			33774
GW-26	-17.8		-27.2		16.1	19.8	4.1	59.9	47	no orif	fice plate			NA
GW-27	-17.5		-26.2		27.9	26.7	0	45.3	58	no orif	fice plate			824901

### WELL FIELD DATA

	WELL PRESS	-SIDE SURE <sup>(1)</sup>	HEADEI PRESS		% CH4	% CO <sub>2</sub>	% O2	% BAL.	темр.	ORIFICE PLATE DP <sup>(1)</sup>		VALVE TURNS OPEN <sup>(1)</sup>		LEACHATE PUMP CYCLE#
LOCATION	I	P	I	P						I	P	I	P	
GW-28	-18.2		-27.5		20.2	21.7	3.0	54.7	40	no orifi	ce plate			547026
GW-29	-4.5		-45.4		14.2	11.3	11.2	63.5	51	no orifi	ce plate			201556
GW-30	-7.5		-26.1		30.5	25.2	0.5	43.5	54	no orifi	ce plate			271734
GW-31	-37.7		-43.0		61.0	28.8	1.6	8.5	53	no orifi	ce plate			NA
GW-32	-28.8		-33.0		46.3	17.9	6.6	29.4	53	no orifi	ce plate			459731
GW-33	-26.4		-32.6		56.2	29.1	2.1	12.2	55					350
GW-34	-26.2		-28.0		2.5	1.0	20.2	76.3	49	no orifi	ce plate			710823
LP1R	-24.8		-41.5		21.4	8.6	14.5	55.5	52	no orifi	ce plate			28322
LP2R	-41.2		-42.5		50.0	22.1	4.5	23.4	53	no orifi	ce plate			441678
LP3	-36.0		-41.5		1.0	0.5	20.2	78.2	51					923485
LP4	-40.9		-40.9		64.2	18.2	3.3	13.7	52	no orifi	ce plate			601521
LP8	-37.8		-40.0		66.1	27.9	0.8	5.3	51					NA
LP10	-31.0		-36.5		62.0	26.0	1.1	11.1	57					514967
LP11	-1.5		-42.0		4.7	2.3	19.0	74.2	50	no orifi	ce plate			604506
МНЕ	-34.4		-43.7		43.6	21.4	6.8	28.1	54	no orifi	ce plate			42555
MHW	-0.8		-42.8		0.2	0.2	20.7	78.9	52	no orifi	ce plate			208

Notes: I = initial reading; P = post adjustment reading; NC = no change; NR = no reading

### GAS PROBE DATA

LOCATION	PRESSURE	% CH4	LEL CH4	% O2	% CO <sub>2</sub>	% BAL.
GP3 (2)	0	0	0	20.9	0	79.1
GP4A	0	0	0	20.9	0.1	79.1
GP5A	0	0	0	20.9	0	79.1
GP6	0	0	0	19.9	0.7	79.4
GP7	0	0	0	20.9	0	79.1
GP8	0	0	0	18.6	1.2	80.2
AA1 (1)	0	0	0	20.9	0	79.1
AA2 (1)	0	0	0	20.9	0	79.1
AA3 (1)	0	0	0	20.9	0	79.1

Notes: (1) Ambient air locations are monitored annually.

<sup>(2)</sup> Gas probe well casing is above the protective casing. Cannot lock the well.

NA = Not Applicable

#### Condensate Sump Cycles

Conuci	isate sump cycles
CS-1:	NA
CS-2:	NA
CS-3	NA
CS-4	NA

Weather:	Cloudy		Temperature:	66	°F	Technician:	Nickolas Carriker	Date: 9/26/2019
Barometric pressure:	29.43	Trend:				Notes:		
Ground conditions:	Damp							
Gas/O <sub>2</sub> meter model:	Envision	Serial	#: 1803203B					
Date last calibrated:	09/26/2019							

	BLOWER/FL	ARE SYSTEM	GAS-TO-ENE	RGY SYSTEM	LEACHATE LOADOUT AND ADDITIONAL BLOWER/FLARE DATA			
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS	INITIAL READINGS	POST ADJUSTMENTS	Leachate tank level	8.98 Feet		
Status (on/off)	ON	ON	NA	NA	Pump operation (hours)	NA Hours		
Flow rate (cfm)	NA	101.2	NA	NA	Compressor pressure	124 psi		
Combustion temperature (°F)	NA	997	NA	NA	Compressor temperature	<u>214</u> °F		
Inlet pressure (in w.c.)	NA	-39.6	NA	NA	Blower operation (hours)	NA Hours		
Outlet pressure (in w.c.)	NA	20.6	NA	NA				
Blower building valve setting	NA	NA	NA	NA				
Gas inlet temperature (°F)	NA	67	NA	NA	Notes:			
% CH4	NA	25.6	NA	NA				
% CO <sub>2</sub>	NA	11.8	NA	NA				
% O <sub>2</sub>	NA	8.6	NA	NA				
% Balance	NA	54.0	NA	NA				

# Landfill Gas/Leachate Monitoring **HOD Landfill** Antioch, Illinois WELL FIELD DATA

						VVE	LLL FIELD	DATA						
		L-SIDE SURE <sup>(1)</sup>	HEADE PRESS		% CH4	% CO <sub>2</sub>	% O2	% BAL.	темр.		CE PLATE OP <sup>(1)</sup>		VE TURNS OPEN <sup>(1)</sup>	LEACHATE PUMP CYCLE #
LOCATION	I	P	I	P						I	P	I	P	
GWF-2	-38.7		-38.8		38.6	18.7	7.6	35.1	67					751342
GWF-3	-29.5		-37.9		61.2	27.6	1.3	9.9	65					228731
GWF-4	-10.6		-12.3		0	0.1	20.9	79.0	68					253705
GWF-5	-31.2		-31.3		0	0.1	20.9	79.0	68					NA
GWF-8	-32.1		-32.1		11.1	7.2	13.6	68.1	66	no orif	ice plate			4402
GWF-10	-36.4		-36.9		62.4	33.5	0.8	3.3	65	no orif	ice plate			966620
GW-15	-36.4		-36.5		46.8	16.9	4.5	31.8	64	no orif	ice plate			199779
GW-16	-37.6		-37.9		56.2	27.3	1.4	15.1	66					973451
GW-17	-35.6		-36.0		18.0	23.4	3.4	55.2	67	no orif	ice plate			401351
GW-18	-34.8		-35.3		48.6	27.8	3.8	19.8	68	no orif	ice plate			207
GW-19	-21.6		-21.6		27.9	11.3	9.1	51.7	68					590972
GW-20	-36.5		-36.7		1.0	0.7	18.4	79.9	68					209
GW-21	-34.9		-34.7		59.8	25.3	1.6	13.3	67	no orif	ice plate			419426
GW-22	-28.3		-37.9		50.7	28.2	3.1	18.0	67	no orif	ice plate			275097
GW-23	-35.6		-36.9		21.3	16.2	18.7	43.8	68					4169
GW-24	-36.8		-37.1		56.2	23.5	1.8	18.5	67	no orif	ice plate			763949
GW-25R	-2.6		-38.6		59.8	22.8	2.3	15.1	59	no orif	ice plate			33774
GW-26	-33.2		-38.2		5.0	2.2	17.9	74.9	68	no orif	ice plate			NA
GW-27	-38.6		-39.2		20.1	10.0	1.0	68.9	66	no orif	ice plate			824901

### WELL FIELD DATA

	WELL PRESS	-SIDE SURE <sup>(1)</sup>	HEADEI PRESSI		% CH4	% CO <sub>2</sub>	% O2	% BAL.	темр.	ORIFICE PLATE DP <sup>(1)</sup>		VALVE TURNS OPEN <sup>(1)</sup>		LEACHATE PUMP CYCLE#
LOCATION	I	P	I	P						I	P	I	P	
GW-28	-20.6		-33.9		21.6	13.4	6.2	58.8	68	no orifi	ce plate			547026
GW-29	-23.7		-36.9		23.9	14.2	7.9	54.0	67	no orifi	ce plate			201560
GW-30	-32.4		-37.5		26.4	11.4	0.8	61.4	62	no orifi	ce plate			271733
GW-31	-36.5		-37.3		55.6	30.1	0.4	13.9	60	no orifi	ce plate			NA
GW-32	-36.2		-38.7		61.2	23.3	2.8	12.7	58	no orifi	ce plate			501246
GW-33	-29.9		-31.4		35.7	18.6	7.4	38.3	68					359
GW-34	-36.5		-37.1		5.6	0.7	18.6	75.1	67	no orifi	ce plate			710823
LP1R	-39.3		-39.3		0.0	0.1	20.9	79.1	69	no orifi	ce plate			28322
LP2R	-38.9		-39.1		48.3	18.6	5.7	27.4	68	no orifi	ce plate			441678
LP3	-37.5		-38.0		4.0	2.4	19.8	73.8	68					923485
LP4	-38.1		-38.9		51.2	24.3	1.4	23.1	67	no orifi	ce plate			601943
LP8	-20.4		-38.1		68.4	31.5	0.1	0	59					NA
LP10	-28.4		-39.6		35.7	17.4	2.8	44.1	68					514967
LP11	-0.9		-39.5		3.8	2.3	20.1	73.8	67	no orifi	ce plate			604506
МНЕ	-38.5		-38.9		27.6	11.9	12.0	48.5	68	no orifi	ce plate			42555
MHW	-0.3		-38.8		1.0	0.2	20.1	78.7	68	no orifi	ce plate			208

Notes: I = initial reading; P = post adjustment reading; NC = no change; NR = no reading

### GAS PROBE DATA

LOCATION	PRESSURE	% CH4	LEL CH4	% O2	% CO <sub>2</sub>	% BAL.
GP3 (2)	0	0	0	20.9	0	79.1
GP4A	0	0	0	20.9	0.1	79.0
GP5A	0	0	0	20.9	0	79.1
GP6	0	0	0	20.9	0	79.1
GP7	0	0	0	20.9	0	79.1
GP8	0	0	0	19.9	1.4	78.7
AA1 (1)	0	0	0	20.9	0	79.1
AA2 (1)	0	0	0	20.9	0	79.1
AA3 (1)	0	0	0	20.9	0	79.1

Notes: (1) Ambient air locations are monitored annually.

<sup>(2)</sup> Gas probe well casing is above the protective casing. Cannot lock the well.

NA = Not Applicable

#### Condensate Sump Cycles

Condci	nsate sump cycles
CS-1:	NA
CS-2:	NA
CS-3	NA
CS-4	NA

Weather:	Cloudy		Temperature:	57	°F	Technician:	Nickolas Carriker	Date: 10/18/2019	
Barometric pressure:	29.71	Trend:				Notes:			
Ground conditions:	WET								
Gas/O <sub>2</sub> meter model:	Envision	Serial	#: 1803203B						
Date last calibrated:	10/18/2019								

	BLOWER/FL	ARE SYSTEM	GAS-TO-ENE	RGY SYSTEM	LEACHATE LOADOUT AND ADDITIONAL BLOWER/FLARE DATA			
ITEM (UNITS)	INITIAL READINGS	POST ADJUSTMENTS	INITIAL READINGS	POST ADJUSTMENTS	Leachate tank level	8.91		
Status (on/off)	ON	ON	NA	NA	Pump operation (hours)	NA Hours		
Flow rate (cfm)	NA	114.3	NA	NA	Compressor pressure	104 psi		
Combustion temperature (°F)	NA	897	NA	NA	Compressor temperature	<u>219</u> °F		
Inlet pressure (in w.c.)	NA	-38.6	NA	NA	Blower operation (hours)	NA Hours		
Outlet pressure (in w.c.)	NA	20.1	NA	NA				
Blower building valve setting	NA	NA	NA	NA				
Gas inlet temperature (°F)	NA	68	NA	NA	Notes:			
% CH4	NA	27.3	NA	NA				
% CO <sub>2</sub>	NA	14.1	NA	NA				
% O <sub>2</sub>	NA	8.9	NA	NA				
% Balance	NA	49.7	NA	NA				

### WELL FIELD DATA

		L-SIDE SURE <sup>(1)</sup>	HEADE PRESS		% CH4	% CO <sub>2</sub>	% O2	% BAL.	ТЕМР.		CE PLATE DP <sup>(1)</sup>		VE TURNS OPEN <sup>(1)</sup>	LEACHATE PUMP CYCLE #
LOCATION	I	P	I	P						I	P	I	P	
GWF-2	-42.3		-43.0		38.1	17.5	8.1	36.4	54					751342
GWF-3	-34.1		-42.4		60.8	27.2	1.4	9.8	52					228731
GWF-4	-30.3		-40.3		76.7	21.1	0	2.2	50					253705
GWF-5	-6.4		-34.0		0	0.1	20.2	79.7	59					5187
GWF-8	-42.0		-43.6		0	0	19.5	80.5	50	no orif	fice plate			4402
GWF-10	-42.6		-44.5		63.9	32.6	0.7	2.8	52	no orif	fice plate			966620
GW-15	-38.0		-39.9		45.3	15.9	5.5	32.6	52	no orif	fice plate			199779
GW-16	-38.8		-41.4		74.6	21.0	0.5	4.0	58					973451
GW-17	-36.1		-40.1		15.9	18.3	2.5	63.3	51	no orif	fice plate			401351
GW-18	-39.0		-40.1		51.7	24.1	3.6	21.4	50	no orif	fice plate			207
GW-19	-3.5		-3.5		22.0	9.3	11.5	57.2	50					590972
GW-20	-31.7		-32.6		0.5	0.4	19.8	79.3	54					209
GW-21	-32.5		-34.2		62.0	26.5	2.3	9.4	55	no orif	fice plate			419426
GW-22	-14.6		-34.0		52.8	27.5	3.2	16.2	53	no orif	fice plate			275099
GW-23	-33.7		-34.1		5.8	2.5	18.1	73.5	56					13726
GW-24	-32.2		-34.0		54.0	22.4	1.6	22.0	52	no orif	fice plate			763949
GW-25R	-1.3		-37.2		69.9	24.5	2.0	3.6	52	no orifice plate				33774
GW-26	-36.3		-41.1		1.0	2.2	18.5	78.1	53	no orifice plate				472
GW-27	-37.4		-40.1		16.4	21.2	0.5	61.6	51	no orif	fice plate			824901

### WELL FIELD DATA

	WELL PRESS	-SIDE SURE <sup>(1)</sup>	HEADEI PRESS		% CH4	% CO <sub>2</sub>	% O2	% BAL.	темр.	ORIFICE PLATE DP <sup>(1)</sup>		VALVE OPE		LEACHATE PUMP CYCLE#
LOCATION	I	P	I	P						I	P	I	P	
GW-28	-27.2		-41.4		8.3	15.1	5.3	70.8	52	no orifi	ce plate			674654
GW-29	-19.1		-37.5		7.5	4.3	15.8	72.4	53	no orifi	ce plate			202560
GW-30	-30.2		-39.8		13.9	20.8	0.5	64.6	47	no orifi	ce plate			271734
GW-31	-38.7		-40.4		58.5	30.4	0.7	10.4	49	no orifi	ce plate			NA
GW-32	-34.7		-42.8		61.3	23.2	2.9	12.8	51	no orifi	ce plate			840513
GW-33	-24.8		-26.8		33.4	17.0	9.0	40.6	53					7694
GW-34	-23.4		-24.8		1.0	0.3	20.0	78.4	63	no orifi	ce plate			710823
LP1R	-39.4		-40.0		9.0	3.6	17.4	69.7	50	no orifi	ce plate			28322
LP2R	-38.7		-40.2		46.0	17.7	6.8	29.9	54	no orifi	ce plate			441678
LP3	-38.5		-40.5		1.5	0.7	19.8	78.0	51					923485
LP4	-38.2		-40.7		47.2	13.7	7.5	31.3	53	no orifi	ce plate			601943
LP8	-1.0		-40.9		77.8	20.7	0.2	1.3	49					NA
LP10	-38.0		-39.1		40.8	19.7	2.3	36.9	52					514967
LP11	-0.3		-41.3		4.0	1.5	19.6	74.6	54	no orifi	ce plate			604506
МНЕ	-34.3		-40.4		27.3	11.8	11.7	49.2	55	no orifi	ce plate			42555
MHW	-0.6		-40.0		0.3	0.1	19.9	79.5	56	no orifi	ce plate			208

Notes: I = initial reading; P = post adjustment reading; NC = no change; NR = no reading

### GAS PROBE DATA

LOCATION	PRESSURE	% CH4	LEL CH4	% O2	% CO <sub>2</sub>	% BAL.
GP3 (2)	0	0	0	20.9	0	78.9
GP4A	0	0	0	20.9	0	79.0
GP5A	0	0	0	20.9	0	78.1
GP6	0	0	0	20.9	0	81.3
GP7	0	0	0	20.9	0	78.7
GP8	0	0	0	20.1	0.4	79.5
AA1 (1)	0	0	0	20.9	0	79.1
AA2 (1)	0	0	0	20.9	0	79.1
AA3 (1)	0	0	0	20.9	0	79.1

Notes: (1) Ambient air locations are monitored annually.

<sup>(2)</sup> Gas probe well casing is above the protective casing. Cannot lock the well.

NA = Not Applicable

#### Condensate Sump Cycles

Conde	isate sump cycles
CS-1:	NA
CS-2:	NA
CS-3	NA
CS-4	NA

# Appendix C

Leachate Volume Extracted and Local Precipitation - 2019

# Appendix C. Leachate Volume Extracted and Local Precipitation - 2019 HOD Landfill, Antioch, Illinois / SCS Engineers Project #25212005.00

		20	19 Annual Moni	toring Period			
Month	Number of Days in Month	Leachate Volume Removed (gallons)		Month	Number of Days in Month	Leachate Volume Removed (gallons)	Precipitation (inches)
January	31	36,000	0.58	July	31	60,000	3.30
February	28	36,000	2.75	August	31	96,000	4.56
March	31	66,000	1.28	September	30	105,500	9.62
April	30	54,000	3.14	October	31	114,000	6.88
May	31	66,000	6.23	November	30	42,000	1.24
June	30	30,000	2.76	December	31	96,000	1.43

Number of Days for this Reporting Period 365 Total Leachate Removed 801,500 gallons

Precipitation (inches) for this Reporting Period 43.77 Average 2,196 gallons/day

		HISTORIC T	OTALS		
Year	Leachate Removed (gallons)	Precipitation (inches)	Year	Leachate Removed (gallons)	Precipitation (inches)
2001	1,586,000	36	2011	1,449,201	45
2002	1,666,000	30	2012	1,282,500	27
2003	1,314,000	33	2013	565,500	39
2004	1,466,500	34	2014	435,500	38
2005	1,497,500	27	2015	1,219,500	37
2006	2,221,500	40	2016	1,162,500	26
2007	1,907,100	43	2017	1,065,500	39
2008	1,868,000	47	2018	821,500	36
2009	1,466,000	44	2019	801,500	44
2010	1,283,000	35			

#### Notes:

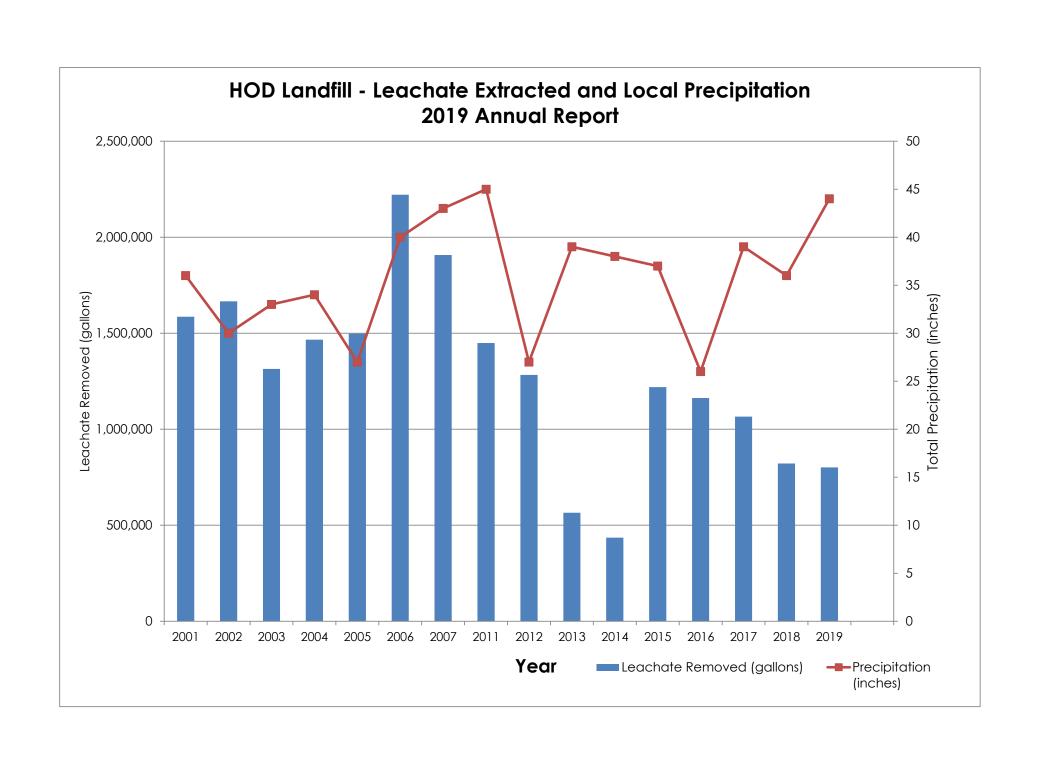
- 1) Precipitation data is from Kenosha Regional Airport (USW00004845) and obtained through Midwestern Regional Climate Center.
- 2) 2000 2019 Annual Average Precipitation at Kenosha Regional Airport is 31.73" via National Oceanic and Atmospheric Administration.
- 3) Leachate removal records obtained from Waste Management personnel.

 Created by:
 TLC
 Date: 1/14/2014
 Total Leachate Extracted

 Last revision by:
 ZTW
 Date: 1/27/2020
 2001 - 2019 (gallons)

 Checked by:
 AJR
 Date: 3/5/2020
 25,078,801

 $\label{lem:condition} \begin{tabular}{l} $Z:\Pojects\25212005.00\Reports\2019\Annual\ Report\Appendix\ C-Leachate\ Hauling\ Records\ and\ Precipitation\[Appendix\ C-Leachate\ Hauled\ Off\ Site\ and\ Precipitation\ Information.xls\] $Leachate\ Removed $$ $Leachate$ 



# Appendix D Leachate Results - 2019

# Appendix D. Leachate Results HOD Landfill - Antioch, Illinois / SCS Engineers Project # 25212005.00

S66/2019   LCT-01   Fluoride, Dissolved   0.5   0.5   U mg   5/6/2019   LCT-01   Nitrate, Dissolved   4.2   0.02   mg   5/6/2019   LCT-01   Chemical Oxygen Demand   446   25 mg   5/6/2019   LCT-01   Total Recoverable Phenolics   0.02   0.005   mg   5/6/2019   LCT-01   Total Recoverable Phenolics   0.02   0.005   mg   5/6/2019   LCT-01   Adicicarb   7.4   2.5   µg   5/6/2019   LCT-01   Carbofuran   2.5   2.5   U µg   5/6/2019   LCT-01   Carbofuran   2.5   2.5   U µg   5/6/2019   LCT-01   Analimony   10   10   U µg   5/6/2019   LCT-01   Arsenic   10   10   U µg   5/6/2019   LCT-01   Arsenic   10   10   U µg   5/6/2019   LCT-01   Arsenic   10   10   U µg   5/6/2019   LCT-01   Barium   400   200   U µg   5/6/2019   LCT-01   Barium   400   200   U µg   5/6/2019   LCT-01   Barium   5   5   U µg   5/6/2019   LCT-01   Barium   5   5   U µg   5/6/2019   LCT-01   Boron   2940   100   U µg   5/6/2019   LCT-01   Boron   2940   100   U µg   5/6/2019   LCT-01   Boron   2940   100   U µg   5/6/2019   LCT-01   Cadmium   5   5   U µg   5/6/2019   LCT-01   Cadmium   5/6/2019   LCT-01   Cobalt   10   10   U µg   5/6/2019   LCT-01   Cobalt   5/6/2019   LCT-01   Cobalt   5/6/2019   LCT-01   Cobalt   5/6/2019   LCT-01   Lead   12.8   3   µg   5/6/2019   LCT-01   Lead   12.8   3   µg   5/6/2019   LCT-01   Lead   12.8   3   µg   5/6/2019   LCT-01   Manganese   179   5	Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
Sefs/2019   LCT-01   Nitrate, Dissolved   4.2   0.02   mg	5/6/2019	LCT-01	Fluoride	0.5	0.5	U	mg/L
Sefs/2019   LCT-01   Nitrate, Dissolved   4,2   0.02   mg	5/6/2019	LCT-01	Fluoride, Dissolved	0.5	0.5	U	mg/L
September   Sept	5/6/2019	LCT-01	Nitrate, Dissolved	4.2	0.02		mg/L
Schizor   Schi	5/6/2019	LCT-01	Chemical Oxygen Demand	446	25		mg/L
Schizoro   LCT-01   Carbofuran   2.5   2.5   U   µg,	5/6/2019	LCT-01	Total Recoverable Phenolics	0.02	0.005		mg/L
Self-2019	5/6/2019	LCT-01	Aldicarb	7.4	2.5		μg/L
Self-2019   LCT-01   Endothall   25   25   U   µg.	5/6/2019	LCT-01	Carbofuran	2.5	2.5	U	μg/L
S/6/2019   LCT-01   Antimony   10   10   U   µg.	5/6/2019	LCT-01	Endothall	25	25	U	μg/L
S/6/2019   LCT-01   Arsenic   10   10   U   µg.	5/6/2019	LCT-01	Antimony	10	10	U	μg/L
S/6/2019   LCT-01   Arsenic Dissolved   10   10   U   µg.	5/6/2019	LCT-01	Arsenic	10	10	U	μg/L
Sci-10	5/6/2019	LCT-01	Arsenic, Dissolved	10	10	U	μg/L
S66/2019   LCT-01   Baryllium   S   S   U   µg.	5/6/2019	LCT-01		400	200		μg/L
S/6/2019	5/6/2019	LCT-01	Barium, Dissolved	200	200	U	μg/L
S/6/2019   LCT-01   Boron   2940   100   µgy   S/6/2019   LCT-01   Boron, Dissolved   2730   100   µgy   S/6/2019   LCT-01   Cadmium   5   5   U µgy   S/6/2019   LCT-01   Cadmium, Dissolved   5   5   U µgy   S/6/2019   LCT-01   Calcium, Dissolved   5   5   U µgy   S/6/2019   LCT-01   Calcium, Dissolved   82400   5000   µgy   S/6/2019   LCT-01   Chromium   11.4   10   µgy   S/6/2019   LCT-01   Chromium, Dissolved   10   10   U µgy   S/6/2019   LCT-01   Chromium, Dissolved   10   10   U µgy   S/6/2019   LCT-01   Cobalt   10   10   U µgy   S/6/2019   LCT-01   Cobalt   10   10   U µgy   S/6/2019   LCT-01   Cobalt   10   10   U µgy   S/6/2019   LCT-01   Copper   24.5   10   µgy   S/6/2019   LCT-01   Copper, Dissolved   10   10   U µgy   S/6/2019   LCT-01   Copper, Dissolved   10   10   U µgy   S/6/2019   LCT-01   Iron   15300   100   µgy   S/6/2019   LCT-01   Iron   15300   100   µgy   S/6/2019   LCT-01   Iron   Dissolved   864   100   µgy   S/6/2019   LCT-01   Lead   12.8   3   µgy   S/6/2019   LCT-01   Lead   12.8   3   U µgy   S/6/2019   LCT-01   Lead   12.8   3   U µgy   S/6/2019   LCT-01   Magnesium, Dissolved   97400   5000   µgy   S/6/2019   LCT-01   Magnesien   179   5   µgy   S/6/2019   LCT-01   Magnese   179   5   µgy   S/6/2019   LCT-01   Magnese   179   5   µgy   S/6/2019   LCT-01   Selenium   8.7   8.7   U µgy   S/6/2019   LCT-01   Silver   10   10   U µgy   S/6/2019   LCT-01   Selenium   11   11   U µgy   S/6/2019   LCT-01   Selenium   11   11   U µgy   S/6/2019   LCT-01   Selenium   11   11   U µgy   S/6/2019   LCT-01   Selenium, Dissolved   5   5   U µgy   S/6/2019   LCT-01		LCT-01	Beryllium	5	5	U	μg/L
S/6/2019   LCT-01   Boron, Dissolved   2730   100							μg/L
5/6/2019         LCT-01         Cadmium         5         5         U         µgy           5/6/2019         LCT-01         Cadmium, Dissolved         5         5         U         µgy           5/6/2019         LCT-01         Calcium, Dissolved         82400         5000         µgy           5/6/2019         LCT-01         Chromium         11.4         10         µgy           5/6/2019         LCT-01         Chromium, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Chromium, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Cobalt, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Copper         24.5         10         µgy         5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µgy         5/6/2019         LCT-01         Iron         15300         100         µgy         5/6/2019         LCT-01         Iron         15300         100         µgy         5/6/2019         LCT-01         LcT-01         Iron         Iron         Iron         Iron         Iron         Iron         I			Boron, Dissolved				μg/L
5/6/2019         LCT-01         Cadmium, Dissolved         5         5         U         µgy           5/6/2019         LCT-01         Calcium, Dissolved         82400         50000         µgy           5/6/2019         LCT-01         Chromium         11.4         10         µgy           5/6/2019         LCT-01         Chromium, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Cobalt         10         10         U         µgy           5/6/2019         LCT-01         Cobalt, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Iron, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Iron, Dissolved         864         100         µgy           5/6/2019         LCT-01         Lead, Dissolved         3         3         U         µgy           5/6/2019         LCT-01         Magnesium, Dissolved </td <td></td> <td>LCT-01</td> <td></td> <td>5</td> <td>5</td> <td>U</td> <td>μg/L</td>		LCT-01		5	5	U	μg/L
5/6/2019         LCT-01         Calcium, Dissolved         82400         5000         µgy           5/6/2019         LCT-01         Chromium         11.4         10         µgy           5/6/2019         LCT-01         Chromium, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Cobalt         10         10         U         µgy           5/6/2019         LCT-01         Cobalt, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Copper         24.5         10         µgy           5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Iron         15300         100         µgy         5/6/2019         LCT-01         Iron         15300         100         µgy           5/6/2019         LCT-01         Iron         Dissolved         864         100         µgy           5/6/2019         LCT-01         Lead         12.8         3         3         U         µgy           5/6/2019         LCT-01         Magnesium, Dissolved         3         3         3         U						U	μg/L
5/6/2019         LCT-01         Chromium         11.4         10         µgy           5/6/2019         LCT-01         Chromium, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Cobalt         10         10         U         µgy           5/6/2019         LCT-01         Cobalt, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Copper         24.5         10         U         µgy           5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Iron         15300         100         µgy           5/6/2019         LCT-01         Iron, Dissolved         864         100         µgy           5/6/2019         LCT-01         Lead         12.8         3         µgy           5/6/2019         LCT-01         Magnesium, Dissolved         3         3         U         µgy           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µgy           5/6/2019         LCT-01         Manganese         179         5         µgy     <					5000		μg/L
5/6/2019         LCT-01         Chromium, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Cobalt         10         10         U         µgy           5/6/2019         LCT-01         Cobalt, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Copper         24.5         10         U         µgy           5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Iron         15300         100         µgy           5/6/2019         LCT-01         Iron, Dissolved         864         100         µgy           5/6/2019         LCT-01         Lead         12.8         3         µgy           5/6/2019         LCT-01         Magnesium, Dissolved         3         3         U         µgy           5/6/2019         LCT-01         Manganese         179         5         µgy           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µgy           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µgy <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>μg/L</td>							μg/L
5/6/2019         LCT-01         Cobalt         10         10         U         µgy           5/6/2019         LCT-01         Cobalt, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Copper         24.5         10         U         µgy           5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Iron, Dissolved         864         100         µgy           5/6/2019         LCT-01         Lead         12.8         3         µgy           5/6/2019         LCT-01         Lead, Dissolved         3         3         U         µgy           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µgy           5/6/2019         LCT-01         Manganese         179         5         µgy           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µgy           5/6/2019         LCT-01         Nickel         29.4         10         µgy           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µgy						U	μg/L
5/6/2019         LCT-01         Cobalt, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Copper         24.5         10         U µgy           5/6/2019         LCT-01         Copper, Dissolved         10         10         U µgy           5/6/2019         LCT-01         Iron         15300         100         µgy           5/6/2019         LCT-01         Iron, Dissolved         864         100         µgy           5/6/2019         LCT-01         Lead         12.8         3         µgy           5/6/2019         LCT-01         Lead, Dissolved         3         3         U µgy           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µgy           5/6/2019         LCT-01         Manganese         179         5         µgy           5/6/2019         LCT-01         Manganese         179         5         µgy           5/6/2019         LCT-01         Mickel         29.4         10         µgy           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µgy           5/6/2019         LCT-01         Silver						Ü	μg/L
5/6/2019         LCT-01         Copper         24.5         10         µgy           5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Iron         15300         100         µgy           5/6/2019         LCT-01         Iron, Dissolved         864         100         µgy           5/6/2019         LCT-01         Lead         12.8         3         µgy           5/6/2019         LCT-01         Lead, Dissolved         3         3         U         µgy           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µgy           5/6/2019         LCT-01         Magnese, Dissolved         97400         5000         µgy           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µgy           5/6/2019         LCT-01         Nickel         29.4         10         µgy           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µgy           5/6/2019         LCT-01         Silver, Dissolved         26.2         10         µgy           5/6/2019							μg/L
5/6/2019         LCT-01         Copper, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Iron         15300         100         µg/s           5/6/2019         LCT-01         Iron, Dissolved         864         100         µg/s           5/6/2019         LCT-01         Lead         12.8         3         µg/s           5/6/2019         LCT-01         Lead, Dissolved         3         3         U         µg/s           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µg/s           5/6/2019         LCT-01         Manganese         179         5         µg/s           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µg/s           5/6/2019         LCT-01         Nickel         29.4         10         µg/s           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µg/s           5/6/2019         LCT-01         Selenium         8.7         8.7         U         µg/s           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/s							
5/6/2019         LCT-01         Iron         15300         100         µg/s           5/6/2019         LCT-01         Iron, Dissolved         864         100         µg/s           5/6/2019         LCT-01         Lead         12.8         3         µg/s           5/6/2019         LCT-01         Lead, Dissolved         3         3         U         µg/s           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µg/s           5/6/2019         LCT-01         Manganese         179         5         µg/s           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µg/s           5/6/2019         LCT-01         Nickel         29.4         10         µg/s           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µg/s           5/6/2019         LCT-01         Silver         10         10         U         µg/s           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Thallium         11         11         1         U         µg/s      <						U	μg/L
5/6/2019         LCT-01         Iron, Dissolved         864         100         µg/s           5/6/2019         LCT-01         Lead         12.8         3         µg/s           5/6/2019         LCT-01         Lead, Dissolved         3         3         U         µg/s           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µg/s           5/6/2019         LCT-01         Manganese         179         5         µg/s           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µg/s           5/6/2019         LCT-01         Nickel         29.4         10         µg/s           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µg/s           5/6/2019         LCT-01         Silver, Dissolved         26.2         10         µg/s           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Tallium         11         11         U         µg/s							μg/L
5/6/2019         LCT-01         Lead         12.8         3         µg/s           5/6/2019         LCT-01         Lead, Dissolved         3         3         U         µg/s           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µg/s           5/6/2019         LCT-01         Manganese         179         5         µg/s           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µg/s           5/6/2019         LCT-01         Nickel         29.4         10         µg/s           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µg/s           5/6/2019         LCT-01         Selenium         8.7         8.7         U         µg/s           5/6/2019         LCT-01         Silver         Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Thallium         11         11         U         µg/s           5/6/2019         LCT-01         Zinc         44.7         20         U							µg/L
5/6/2019         LCT-01         Lead, Dissolved         3         3         U         µg/s           5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µg/s           5/6/2019         LCT-01         Manganese         179         5         µg/s           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µg/s           5/6/2019         LCT-01         Nickel         29.4         10         µg/s           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µg/s           5/6/2019         LCT-01         Selenium         8.7         8.7         U         µg/s           5/6/2019         LCT-01         Silver         10         10         U         µg/s           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Thallium         11         11         U         µg/s           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg/s           5/6/2019         LCT-01         Antimony, Dissolved         10         10							μg/L
5/6/2019         LCT-01         Magnesium, Dissolved         97400         5000         µg.           5/6/2019         LCT-01         Manganese         179         5         µg.           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µg.           5/6/2019         LCT-01         Nickel         29.4         10         µg.           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µg.           5/6/2019         LCT-01         Selenium         8.7         8.7         U         µg.           5/6/2019         LCT-01         Silver         10         10         U         µg.           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg.           5/6/2019         LCT-01         Thallium         11         11         U         µg.           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg.           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µg.           5/6/2019         LCT-01         Beryllium, Dissolved         5         5 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>U</td><td>μg/L</td></t<>						U	μg/L
5/6/2019         LCT-01         Manganese         179         5         µду           5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µду           5/6/2019         LCT-01         Nickel         29.4         10         µду           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µду           5/6/2019         LCT-01         Selenium         8.7         8.7         U         µду           5/6/2019         LCT-01         Silver         10         10         U         µду           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µду           5/6/2019         LCT-01         Thallium         11         11         U         µду           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µду           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µду           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µду           5/6/2019         LCT-01         Beryllium, Dissolved         5         5							µg/L
5/6/2019         LCT-01         Manganese, Dissolved         72.2         5         µg           5/6/2019         LCT-01         Nickel         29.4         10         µg/           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µg/           5/6/2019         LCT-01         Selenium         8.7         8.7         U         µg/           5/6/2019         LCT-01         Silver         10         10         U         µg/           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/           5/6/2019         LCT-01         Thallium         11         11         U         µg/           5/6/2019         LCT-01         Zinc         44.7         20         µg/           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg/           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µg/           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         µg/           5/6/2019         LCT-01         Mercury         0.2         0.2 <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td>μg/L</td></t<>							μg/L
5/6/2019         LCT-01         Nickel         29.4         10         µgy           5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µgy           5/6/2019         LCT-01         Selenium         8.7         8.7         U         µgy           5/6/2019         LCT-01         Silver         10         10         U         µgy           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Thallium         11         11         U         µgy           5/6/2019         LCT-01         Zinc         44.7         20         µgy           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µgy           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µgy           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         µgy           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         µgy           5/6/2019         LCT-01         Mercury         0.2         0.2<							μg/L
5/6/2019         LCT-01         Nickel, Dissolved         26.2         10         µg/           5/6/2019         LCT-01         Selenium         8.7         8.7         U         µg/           5/6/2019         LCT-01         Silver         10         10         U         µg/           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/           5/6/2019         LCT-01         Thallium         11         11         U         µg/           5/6/2019         LCT-01         Zinc         44.7         20         µg/           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg/           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µg/           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         µg/           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         µg/           5/6/2019         LCT-01         Mercury         0.2         0.2         U         µg/           5/6/2019         LCT-01         Mercury, Dissolved							µg/L
5/6/2019         LCT-01         Selenium         8.7         8.7         U         µg/           5/6/2019         LCT-01         Silver         10         10         U         µg/           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/           5/6/2019         LCT-01         Thallium         11         11         U         µg/           5/6/2019         LCT-01         Zinc         44.7         20         µg/           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg/           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µg/           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         µg/           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         µg/           5/6/2019         LCT-01         Mercury         0.2         0.2         U         µg/           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         µg/           5/6/2019         LCT-01         Cis-Chlord							μg/L
5/6/2019         LCT-01         Silver         10         10         U         µg/s           5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Thallium         11         11         U         µg/s           5/6/2019         LCT-01         Zinc         44.7         20         µg/s           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg/s           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         µg/s           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         µg/s           5/6/2019         LCT-01         Thallium, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Mercury         0.2         0.2         U         µg/s           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         µg/s           5/6/2019         LCT-01						U	μg/L
5/6/2019         LCT-01         Silver, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Thallium         11         11         U         µg/s           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg/s           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         µg/s           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         µg/s           5/6/2019         LCT-01         Thallium, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Mercury         0.2         0.2         U         µg/s           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         µg/s           5/6/2019         LCT-01         Endrin         0.074         0.074         U         µg/s           5/6/2019         LCT-01         Endrin         0.1         0.1         U         µg/s           5/6/2019							μg/L
5/6/2019         LCT-01         Thallium         11         11         U         μg/s           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         μg/s           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         μg/s           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         μg/s           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         μg/s           5/6/2019         LCT-01         Thallium, Dissolved         5         5         U         μg/s           5/6/2019         LCT-01         Mercury         0.2         0.2         U         μg/s           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         μg/s           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         μg/s           5/6/2019         LCT-01         Endrin         0.1         0.1         U         μg/s           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         μg/s							μg/L
5/6/2019         LCT-01         Zinc         44.7         20         µg/           5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg/           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µg/           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         µg/           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         µg/           5/6/2019         LCT-01         Thallium, Dissolved         10         10         U         µg/           5/6/2019         LCT-01         Mercury         0.2         0.2         U         µg/           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         µg/           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         µg/           5/6/2019         LCT-01         Endrin         0.1         0.1         U         µg/           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         µg/						-	μg/L
5/6/2019         LCT-01         Zinc, Dissolved         20         20         U         µg/s           5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         µg/s           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         µg/s           5/6/2019         LCT-01         Thallium, Dissolved         10         10         U         µg/s           5/6/2019         LCT-01         Mercury         0.2         0.2         U         µg/s           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         µg/s           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         µg/s           5/6/2019         LCT-01         Endrin         0.1         0.1         U         µg/s           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         µg/s							μg/L
5/6/2019         LCT-01         Antimony, Dissolved         10         10         U         μg/s           5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         μg/s           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         μg/s           5/6/2019         LCT-01         Thallium, Dissolved         10         10         U         μg/s           5/6/2019         LCT-01         Mercury         0.2         0.2         U         μg/s           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         μg/s           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         μg/s           5/6/2019         LCT-01         Endrin         0.1         0.1         U         μg/s           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         μg/s						IJ	μg/L
5/6/2019         LCT-01         Beryllium, Dissolved         5         5         U         μg/s           5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         μg/s           5/6/2019         LCT-01         Thallium, Dissolved         10         10         U         μg/s           5/6/2019         LCT-01         Mercury         0.2         0.2         U         μg/s           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         μg/s           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         μg/s           5/6/2019         LCT-01         Endrin         0.1         0.1         U         μg/s           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         μg/s							μg/L
5/6/2019         LCT-01         Selenium, Dissolved         5         5         U         μg/s           5/6/2019         LCT-01         Thallium, Dissolved         10         10         U         μg/s           5/6/2019         LCT-01         Mercury         0.2         0.2         U         μg/s           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         μg/s           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         μg/s           5/6/2019         LCT-01         Endrin         0.1         0.1         U         μg/s           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         μg/s							μg/L
5/6/2019         LCT-01         Thallium, Dissolved         10         10         U         μg/s           5/6/2019         LCT-01         Mercury         0.2         0.2         U         μg/s           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         μg/s           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         μg/s           5/6/2019         LCT-01         Endrin         0.1         0.1         U         μg/s           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         μg/s			3				μg/L
5/6/2019         LCT-01         Mercury         0.2         0.2         U         μg/           5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         μg/           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         μg/           5/6/2019         LCT-01         Endrin         0.1         0.1         U         μg/           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         μg/							μg/L
5/6/2019         LCT-01         Mercury, Dissolved         0.2         0.2         U         μg/           5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         μg/           5/6/2019         LCT-01         Endrin         0.1         0.1         U         μg/           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         μg/							μg/L
5/6/2019         LCT-01         cis-Chlordane         0.074         0.074         U         μg/           5/6/2019         LCT-01         Endrin         0.1         0.1         U         μg/           5/6/2019         LCT-01         gamma-BHC (Lindane)         0.05         0.05         U         μg/							μg/L
5/6/2019 LCT-01 Endrin 0.1 0.1 U μg/ 5/6/2019 LCT-01 gamma-BHC (Lindane) 0.05 0.05 U μg/							μg/L
5/6/2019 LCT-01 gamma-BHC (Lindane) 0.05 0.05 U μg/							μg/L
5/6/2019 LCT-01 Heptachlor 0.05 0.05 U μg/			, ,				μg/L

# Appendix D. Leachate Results HOD Landfill - Antioch, Illinois / SCS Engineers Project # 25212005.00

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	LCT-01	Heptachlor epoxide	0.05	0.05	U	μg/L
5/6/2019	LCT-01	Methoxychlor	0.5	0.5	U	μg/L
5/6/2019	LCT-01	Toxaphene	5	5	U	μg/L
5/6/2019	LCT-01	trans-Chlordane	0.069	0.055		μg/L
5/6/2019	LCT-01	Aroclor 1016	0.47	0.47	U	μg/L
5/6/2019	LCT-01	Aroclor 1221	0.47	0.47	U	μg/L
5/6/2019	LCT-01	Aroclor 1232	0.47	0.47	U	μg/L
5/6/2019	LCT-01	Aroclor 1242	0.47	0.47	U	μg/L
5/6/2019	LCT-01	Aroclor 1248	0.47	0.47	U	μg/L
5/6/2019	LCT-01	Aroclor 1254	0.47	0.47	U	μg/L
5/6/2019	LCT-01	Aroclor 1260	0.47	0.47	U	μg/L
5/6/2019	LCT-01	2,4,5-TP (Silvex)	2.8	2.8	U	μg/L
5/6/2019	LCT-01	2,4-D	10	10	U	μg/L
5/6/2019	LCT-01	Dalapon	3.2	3.2	U	μg/L
5/6/2019	LCT-01	Dinoseb	1.6	1.6	U	μg/L
5/6/2019	LCT-01	Picloram	1.1	1.1	U	μg/L
5/6/2019	LCT-01	1,1,1-Trichloroethane	8.2	8.2	U * F1	μg/L
5/6/2019	LCT-01	1,1,2-Trichloroethane	2.3	2.3	U F1	μg/L
5/6/2019	LCT-01	1,1-Dichloroethene	2.9	2.9	U	μg/L
5/6/2019	LCT-01	1,2,4-Trichlorobenzene	4.1	4.1	U F1	μg/L
5/6/2019	LCT-01	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L
5/6/2019	LCT-01	1,2-Dibromoethane	7.3	7.3	U *	μg/L
5/6/2019	LCT-01	1,2-Dichloroethane	2.1	2.1	U	μg/L
5/6/2019	LCT-01	1,2-Dichloropropane	7.2	7.2	U	μg/L
5/6/2019	LCT-01	Benzene	4.1	4.1	U	μg/L
5/6/2019	LCT-01	Carbon tetrachloride	2.7	2.7	U * F1	μg/L
5/6/2019	LCT-01	Chlorobenzene	7.5	7.5	U	μg/L
5/6/2019	LCT-01	cis-1,2-Dichloroethene	8.1	8.1	U	μg/L
5/6/2019	LCT-01	Ethylbenzene	7.4	7.4	U	μg/L
5/6/2019	LCT-01	Methylene Chloride	4.4	4.4	U	μg/L
5/6/2019	LCT-01	Styrene	7.3	7.3	U	μg/L
5/6/2019	LCT-01	Tetrachloroethene	3.6	3.6	U	μg/L
5/6/2019	LCT-01	Toluene	5.1	5.1	U	μg/L
5/6/2019	LCT-01	trans-1,2-Dichloroethene	9	9	U	μg/L
5/6/2019	LCT-01	Trichloroethene	4.6	4.6	U	μg/L
5/6/2019	LCT-01	Vinyl chloride	9	9	U	μg/L
5/6/2019	LCT-01	Xylenes, Total	6.6	6.6	U	μg/L
5/6/2019	LCT-01	1,2-Dichlorobenzene	10	10	U	μg/L
5/6/2019	LCT-01	1,4-Dichlorobenzene	10	10	U	μg/L
5/6/2019	LCT-01	Alachlor	1.8	1.8	U	μg/L
5/6/2019	LCT-01	Atrazine	25	25	U	μg/L
5/6/2019	LCT-01	Benzo(a)pyrene	10	10	U	μg/L
5/6/2019	LCT-01	Bis(2-ethylhexyl) phthalate	10	10	U	μg/L
5/6/2019	LCT-01	Hexachlorocyclopentadiene	10	10	U	μg/L
5/6/2019	LCT-01	Pentachlorophenol	25	25	U	μg/L
5/6/2019	LCT-01	Simazine	25	25	U	μg/L
5/6/2019	LCT-01	Dissolved Cyanide	0.01	0.01	U	mg/L
5/6/2019	LCT-01	Total Cyanide	0.01	0.01	U F1	mg/L
5/6/2019	LCT-01	Chloride	952	10.2		mg/L
5/6/2019	LCT-01	Chloride, Dissolved	942	10.2	1	mg/L

### Appendix D. Leachate Results HOD Landfill - Antioch, Illinois / SCS Engineers Project # 25212005.00

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	LCT-01	Sulfate, Dissolved	37.3	1.5		mg/L
5/6/2019	LCT-01	Calcium and Magnesium Hardness	733000	500		μg/L
5/6/2019	LCT-01	Total Dissolved Solids Field Filtered	2610	16		mg/L
5/6/2019	LCT-01	Total Suspended Solids	5	5	U	mg/L
5/6/2019	LCT-01	Biochemical Oxygen Demand	18.5	12		mg/L
11/4/2019	LCT-01	Chemical Oxygen Demand	199	20		MG/L
11/4/2019	LCT-01	lron	11200	100		UG/L
11/4/2019	LCT-01	1,1-Dichloroethene	2.9	2.9	U	UG/L
11/4/2019	LCT-01	cis-1,2-Dichloroethene	8.1	8.1	U	UG/L
11/4/2019	LCT-01	Tetrachloroethene	3.6	3.6	U	UG/L
11/4/2019	LCT-01	trans-1,2-Dichloroethene	9	9	U	UG/L
11/4/2019	LCT-01	Trichloroethene	4.6	4.6	U	UG/L
11/4/2019	LCT-01	Vinyl chloride	9	9	U	UG/L
11/4/2019	LCT-01	Chloride	385	3.4		MG/L
11/4/2019	LCT-01	Total Suspended Solids	18.8	5		MG/L
11/4/2019	LCT-01	Biochemical Oxygen Demand	8.5	6		MG/L

#### Abbreviations:

#### Laboratory Notes:

\* = Recovery of Laboratory Control Sample or Laboratory Control Sample Duplicate is control acceptance limits

U = Parameter was not detected at or above the reporting limit

F1 = Matrix Spike and/or Matrix Spike Duplicate Recovery is outside acceptance limits

Created by:	ZTW	Date:	1/29/2019
Last revision by:	ZTW	Date:	1/16/2020
Checked by:	AJR	Date:	3/5/2020

 $Z: \Pojects \ 25212005.00 \ Reports \ 2019 \ Annual \ Report \ Appendix \ D-Leachate \ Results \ Appendix \ D. \ xls \ Appendix \ Appendix \ D. \ xls \ Appendix \ A$ 

# Appendix E Groundwater Results – 2019

### E1 - Field Parameters

SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
5/6/2019	G-102	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1651	UMHOS/CM
		DEPTH TO BOTTOM	24.4	FEET
		DEPTH TO WATER	10.01	FEET
		GROUNDWATER ELEVATION	763.52	FT AMSL
		EH, FIELD	-94.3	MV
		OXYGEN, DISSOLVED	0.88	MG/L
		PH, FIELD	7.03	SU
		TEMPERATURE	51.1	DEG F
		TURBIDITY, FIELD	5.11	NTU
5/7/2019	PZ-03U	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1180	UMHOS/CM
		DEPTH TO BOTTOM	39.5	FEET
		DEPTH TO WATER	2.7	FEET
		GROUNDWATER ELEVATION	763.57	FT AMSL
		EH, FIELD	-124.1	MV
		OXYGEN, DISSOLVED	0.36	MG/L
		PH, FIELD	7.22	SU
		TEMPERATURE	49.4	DEG F
		TURBIDITY, FIELD	1.75	NTU
5/8/2019	PZ-04U	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1047	UMHOS/CM
		DEPTH TO BOTTOM	30.0	FEET
		DEPTH TO WATER	2.68	FEET
		GROUNDWATER ELEVATION	763.81	FT AMSL
		EH, FIELD	-93.4	MV
		OXYGEN, DISSOLVED	0.26	MG/L
		PH, FIELD	6.94	SU
		TEMPERATURE	55.6	DEG F
		TURBIDITY, FIELD	0.84	NTU
5/7/2019	R-01D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	653	UMHOS/CM
		DEPTH TO BOTTOM	101.2	FEET
		DEPTH TO WATER	37.79	FEET
		GROUNDWATER ELEVATION	736.89	FT AMSL
		EH, FIELD	57.5	MV
		OXYGEN, DISSOLVED	1.57	MG/L
		PH, FIELD	7.58	SU
		TEMPERATURE	53	DEG F
		TURBIDITY, FIELD	1.31	NTU
		IUNUIUIII, FIELD	1.01	INIU

SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
5/6/2019	US-01D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	788	UMHOS/CM
		DEPTH TO BOTTOM	95.8	FEET
		DEPTH TO WATER	34.23	FEET
		GROUNDWATER ELEVATION	734.65	FT AMSL
		EH, FIELD	-99.9	MV
		OXYGEN, DISSOLVED	2.93	MG/L
		PH, FIELD	7.73	SU
		TEMPERATURE	52.3	DEG F
		TURBIDITY, FIELD	1.68	NTU
5/7/2019	US-02D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	633	UMHOS/CM
		DEPTH TO BOTTOM	113.1	FEET
		DEPTH TO WATER	35.34	FEET
		GROUNDWATER ELEVATION	735.39	FT AMSL
		EH, FIELD	193.7	MV
		OXYGEN, DISSOLVED	3.64	MG/L
		PH, FIELD	7.15	SU
		TEMPERATURE	55.6	DEG F
		TURBIDITY, FIELD	2.11	NTU
5/7/2019	US-03D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1620	UMHOS/CM
		DEPTH TO BOTTOM	83.2	FEET
		DEPTH TO WATER	35.75	FEET
		GROUNDWATER ELEVATION	733.97	FT AMSL
		EH, FIELD	-122.3	MV
		OXYGEN, DISSOLVED	0.46	MG/L
		PH, FIELD	7.32	SU
		TEMPERATURE	55.8	DEG F
		TURBIDITY, FIELD	3.5	NTU
5/6/2019	US-04D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	520	UMHOS/CM
		DEPTH TO BOTTOM	105.5	FEET
		DEPTH TO WATER	38.93	FEET
		GROUNDWATER ELEVATION	733.77	FT AMSL
		EH, FIELD	35.8	MV
		OXYGEN, DISSOLVED	1.81	MG/L
		PH, FIELD	7.74	SU
		TEMPERATURE	55.0	DEG F
		TURBIDITY, FIELD	0.69	NTU

SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
5/7/2019	US-04S	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1639	UMHOS/CM
		DEPTH TO BOTTOM	25.4	FEET
		DEPTH TO WATER	10.48	FEET
		GROUNDWATER ELEVATION	763.19	FT AMSL
		EH, FIELD	-57.2	MV
		OXYGEN, DISSOLVED	0.51	MG/L
		PH, FIELD	6.93	SU
		TEMPERATURE	52.2	DEG F
		TURBIDITY, FIELD	0.88	NTU
5/6/2019	US-05D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	471	UMHOS/CM
		DEPTH TO BOTTOM	95.9	FEET
		DEPTH TO WATER	33.73	FEET
		GROUNDWATER ELEVATION	734	FT AMSL
		EH, FIELD	126.8	MV
		OXYGEN, DISSOLVED	3.62	MG/L
		PH, FIELD	7.21	SU
		TEMPERATURE	51	DEG F
		TURBIDITY, FIELD	0.53	NTU
5/7/2019	US-06D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	558	UMHOS/CM
		DEPTH TO BOTTOM	85.2	FEET
		DEPTH TO WATER	34.65	FEET
		GROUNDWATER ELEVATION	735.29	FT AMSL
		EH, FIELD	-186.6	MV
		OXYGEN, DISSOLVED	0.1	MG/L
		PH, FIELD	7.97	SU
		TEMPERATURE	51.3	DEG F
		TURBIDITY, FIELD	1.34	NTU
5/7/2019	US-06S	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1136	UMHOS/CM
		DEPTH TO BOTTOM	43.3	FEET
		DEPTH TO WATER	6.49	FEET
		GROUNDWATER ELEVATION	763.41	FT AMSL
		EH, FIELD	-99.9	MV
		OXYGEN, DISSOLVED	0.06	MG/L
		PH, FIELD	7.04	SU
		TEMPERATURE	50.4	DEG F
		TURBIDITY, FIELD	0.01	NTU

SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
5/8/2019	W-03D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1028	UMHOS/CM
		DEPTH TO BOTTOM	80.9	FEET
		DEPTH TO WATER	31.18	FEET
		GROUNDWATER ELEVATION	734.75	FT AMSL
		EH, FIELD	66.1	MV
		OXYGEN, DISSOLVED	2.77	MG/L
		PH, FIELD	7.47	SU
		TEMPERATURE	49.4	DEG F
		TURBIDITY, FIELD	0.71	NTU
5/7/2019	W-06S	COLOR, FIELD	Yellow	
		CONDUCTANCE, SPECIFIC	3273	UMHOS/CM
		DEPTH TO BOTTOM	17.1	FEET
		DEPTH TO WATER	4.02	FEET
		GROUNDWATER ELEVATION	763.39	FT AMSL
		EH, FIELD	-95.5	MV
		OXYGEN, DISSOLVED	0.07	MG/L
		PH, FIELD	6.89	SU
		TEMPERATURE	47.2	DEG F
		TURBIDITY, FIELD	2.53	NTU
5/6/2019	W-08D	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1162	UMHOS/CM
		DEPTH TO BOTTOM	95.8	FEET
		DEPTH TO WATER	33.63	FEET
		GROUNDWATER ELEVATION	734.51	FT AMSL
		EH, FIELD	-92.3	MV
		OXYGEN, DISSOLVED	4.19	MG/L
		PH, FIELD	7.25	SU
		TEMPERATURE	61.3	DEG F
		TURBIDITY, FIELD	1.32	NTU
5/8/2019	VW-03	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	752	UMHOS/CM
		EH, FIELD	227.5	MV
		OXYGEN, DISSOLVED	1.11	MG/L
		PH, FIELD	7.39	SU
		TEMPERATURE	52.8	DEG F
		TURBIDITY, FIELD	1.66	NTU

SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
5/6/2019	SW-01	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	781	UMHOS/CM
		EH, FIELD	71.8	MV
		OXYGEN, DISSOLVED	12.2	MG/L
		PH, FIELD	8.55	SU
		TEMPERATURE	62.8	DEG F
		TURBIDITY, FIELD	1.55	NTU
5/6/2019	SW-02	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	803	UMHOS/CM
		EH, FIELD	86.2	MV
		OXYGEN, DISSOLVED	10.64	MG/L
		PH, FIELD	8.07	SU
		TEMPERATURE	62.5	DEG F
		TURBIDITY, FIELD	1.99	NTU
11/6/2019	G-102	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	1749	UMHOS/CM
		DEPTH TO BOTTOM	24.4	FEET
		DEPTH TO WATER	9.91	FEET
		EH, FIELD	-91.6	MV
		GROUNDWATER ELEVATION	763.62	FT AMSL
		OXYGEN, DISSOLVED	2.7	MG/L
		PH, FIELD	6.91	SU
		TEMPERATURE	55.4	DEG F
		TURBIDITY, FIELD	0.84	NTU
11/5/2019	PZ-03U	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	1199	UMHOS/CM
		DEPTH TO BOTTOM	39.5	FEET
		DEPTH TO WATER	2.75	FEET
		EH, FIELD	100.1	MV
		GROUNDWATER ELEVATION	763.52	FT AMSL
		OXYGEN, DISSOLVED	1.2	MG/L
		PH, FIELD	7.18	SU
		TEMPERATURE	49	DEG F
		TURBIDITY, FIELD	2.36	NTU

SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
11/6/2019	PZ-04U	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	1102	UMHOS/CM
		DEPTH TO BOTTOM	30.0	FEET
		DEPTH TO WATER	2.70	FEET
		EH, FIELD	-10.7	MV
		GROUNDWATER ELEVATION	763.79	FT AMSL
		OXYGEN, DISSOLVED	3.38	MG/L
		PH, FIELD	7.02	SU
		TEMPERATURE	49.4	DEG F
		TURBIDITY, FIELD	0.6	NTU
11/4/2019	R-01D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	644	UMHOS/CM
		DEPTH TO BOTTOM	101.2	FEET
		DEPTH TO WATER	38.3	FEET
		EH, FIELD	45.8	MV
		GROUNDWATER ELEVATION	736.39	FT AMSL
		OXYGEN, DISSOLVED	3.32	MG/L
		PH, FIELD	7.52	SU
		TEMPERATURE	53.3	DEG F
		TURBIDITY, FIELD	1.01	NTU
11/4/2019	US-01D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	804	UMHOS/CM
		DEPTH TO BOTTOM	95.8	FEET
		DEPTH TO WATER	32.9	FEET
		EH, FIELD	-19	MV
		GROUNDWATER ELEVATION	736	FT AMSL
		OXYGEN, DISSOLVED	1.55	MG/L
		PH, FIELD	7.82	SU
		TEMPERATURE	53.1	DEG F
		TURBIDITY, FIELD	1.64	NTU
11/4/2019	US-02D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	806	UMHOS/CM
		DEPTH TO BOTTOM	113.1	FEET
		DEPTH TO WATER	35.2	FEET
		EH, FIELD	188.8	MV
		GROUNDWATER ELEVATION	735.53	FT AMSL
		OXYGEN, DISSOLVED	2.99	MG/L
		PH, FIELD	7.21	SU
		TEMPERATURE	51.7	DEG F
		TURBIDITY, FIELD	2.68	NTU

SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
11/5/2019	US-03D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	1514	UMHOS/CM
		DEPTH TO BOTTOM	83.2	FEET
		DEPTH TO WATER	34.26	FEET
		EH, FIELD	-5.4	MV
		GROUNDWATER ELEVATION	735.46	FT AMSL
		OXYGEN, DISSOLVED	3.71	MG/L
		PH, FIELD	7.31	SU
		TEMPERATURE	54.3	DEG F
		TURBIDITY, FIELD	1.41	NTU
11/5/2019	US-04D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	602	UMHOS/CM
		DEPTH TO BOTTOM	105.5	FEET
		DEPTH TO WATER	36.96	FEET
		EH, FIELD	46.7	MV
		GROUNDWATER ELEVATION	735.74	FT AMSL
		OXYGEN, DISSOLVED	1.95	MG/L
		PH, FIELD	7.68	SU
		TEMPERATURE	49.8	DEG F
		TURBIDITY, FIELD	0.74	NTU
11/6/2019	US-04S	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	1817	UMHOS/CM
		DEPTH TO BOTTOM	25.4	FEET
		DEPTH TO WATER	10.41	FEET
		EH, FIELD	-24.8	MV
		GROUNDWATER ELEVATION	763.26	FT AMSL
		OXYGEN, DISSOLVED	2.80	MG/L
		PH, FIELD	6.86	SU
		TEMPERATURE	55.2	DEG F
		TURBIDITY, FIELD	0.28	NTU
11/5/2019	US-05D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	460	UMHOS/CM
		DEPTH TO BOTTOM	95.9	FEET
		DEPTH TO WATER	31.82	FEET
		EH, FIELD	58.4	MV
		GROUNDWATER ELEVATION	735.91	FT AMSL
		OXYGEN, DISSOLVED	4.53	MG/L
		PH, FIELD	8.02	SU
		TEMPERATURE	51.1	DEG F
		TURBIDITY, FIELD	0.39	NTU

SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
11/5/2019	US-06D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	560	UMHOS/CM
		DEPTH TO BOTTOM	85.2	FEET
		DEPTH TO WATER	34.24	FEET
		EH, FIELD	-43.3	MV
		GROUNDWATER ELEVATION	735.85	FT AMSL
		OXYGEN, DISSOLVED	0.2	MG/L
		PH, FIELD	8.08	SU
		TEMPERATURE	51.5	DEG F
		TURBIDITY, FIELD	0.63	NTU
11/6/2019	US-06S	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	1130	UMHOS/CM
		DEPTH TO BOTTOM	43.3	FEET
		DEPTH TO WATER	6.38	FEET
		EH, FIELD	-67.0	MV
		GROUNDWATER ELEVATION	763.52	FT AMSL
		OXYGEN, DISSOLVED	0.94	MG/L
		PH, FIELD	7.35	SU
		TEMPERATURE	50.0	DEG F
		TURBIDITY, FIELD	0.49	NTU
11/5/2019	W-03D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	822	UMHOS/CM
		DEPTH TO BOTTOM	80.9	FEET
		DEPTH TO WATER	30.22	FEET
		EH, FIELD	49.9	MV
		GROUNDWATER ELEVATION	735.71	FT AMSL
		OXYGEN, DISSOLVED	2.19	MG/L
		PH, FIELD	7.58	SU
		TEMPERATURE	50.2	DEG F
		TURBIDITY, FIELD	0.80	NTU
11/6/2019	W-06S	COLOR, FIELD	yellow	
		CONDUCTANCE, SPECIFIC	3379	UMHOS/CM
		DEPTH TO BOTTOM	17.1	FEET
		DEPTH TO WATER	3.87	FEET
		EH, FIELD	-96.6	MV
		GROUNDWATER ELEVATION	763.54	FT AMSL
		OXYGEN, DISSOLVED	1.19	MG/L
		PH, FIELD	6.88	SU
		TEMPERATURE	50.6	DEG F
		TURBIDITY, FIELD	4.19	NTU

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SAMPLE DATE	SAMPLE POINT	PARAMETER	RESULT	UNITS
11/5/2019	W-08D	COLOR, FIELD	none	
		CONDUCTANCE, SPECIFIC	1108	UMHOS/CM
		DEPTH TO BOTTOM	95.8	FEET
		DEPTH TO WATER	32.15	FEET
		EH, FIELD	-61.2	MV
		GROUNDWATER ELEVATION	735.99	FT AMSL
		OXYGEN, DISSOLVED	0.28	MG/L
		PH, FIELD	7.63	SU
		TEMPERATURE	50.8	DEG F
		TURBIDITY, FIELD	1.10	NTU
11/5/2019	SW-01	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	590	UMHOS/CM
		EH, FIELD	102.9	MV
		OXYGEN, DISSOLVED	11.02	MG/L
		PH, FIELD	8.1	SU
		TEMPERATURE	40.5	DEG F
		TURBIDITY, FIELD	1.54	NTU
11/5/2019	SW-02	COLOR, FIELD	None	
		CONDUCTANCE, SPECIFIC	656	UMHOS/CM
		EH, FIELD	143.4	MV
		OXYGEN, DISSOLVED	11.18	MG/L
		PH, FIELD	8.07	SU
		TEMPERATURE	40.6	DEG F
		TURBIDITY, FIELD	1.78	NTU

#### Abbreviations:

UMHOS/CM = micromhos per centimeter

FT AMSL = feet above mean sea level

MV = Millivolts

NTU = nephelometric turbidity unit

NA = Not Applicable

#### Notes:

- 1. Data presented here are from the Field Information Forms completed during sampling.
- 2. Groundwater elevations presented in this table were those measured at the time groundwater sample collection occurred. The depth to water measurements presented in Table 5 were acquired prior to the start of sampling activities.

Created by: ZTW Date: 1/29/2019
Last revision by: ZTW Date: 1/15/2020
Checked by: AJR Date: 3/5/2020

### E2 - Monitoring Wells

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	G-102	1,1,1-Trichloroethane	2.1	2.1	U	μg/L
5/6/2019	G-102	1,1,2-Trichloroethane	1.9	1.9	U	μg/L
5/6/2019	G-102	1,1-Dichloroethene	2.5	2.5	U	μg/L
5/6/2019	G-102	1,2,4-Trichlorobenzene	1	1	U	μg/L
5/6/2019	G-102	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L
5/6/2019	G-102	1,2-Dibromoethane	2	2	U	μg/L
5/6/2019	G-102	1,2-Dichlorobenzene	0.15	0.15	U	μg/L
5/6/2019	G-102	1,2-Dichloroethane	1.7	1.7	U	μg/L
5/6/2019	G-102	1,2-Dichloropropane	0.1	1.7	U	μg/L
5/6/2019 5/6/2019	G-102 G-102	1,4-Dichlorobenzene 2,4,5-TP (Silvex)	2	0.1 2	U	µg/L
5/6/2019	G-102	2,4,5-1F (SIIVEX)	10	10	U	μg/L μg/L
5/6/2019	G-102 G-102	Alachlor	10	10	U	μg/L μg/L
5/6/2019	G-102	Aldicarb	2.5	2.5	U*	μg/L μg/L
5/6/2019	G-102 G-102	Antimony, Dissolved	0.6	0.6	U	μg/L μg/L
5/6/2019	G-102	Arimmony, bissolved  Aroclor 1016	0.47	0.47	U	μg/L
5/6/2019	G-102	Aroclor 1221	0.47	0.47	U	μg/L
5/6/2019	G-102	Aroclor 1232	0.47	0.47	U	μg/L
5/6/2019	G-102	Aroclor 1242	0.47	0.47	U	μg/L
5/6/2019	G-102	Aroclor 1248	0.47	0.47	U	μg/L
5/6/2019	G-102	Aroclor 1254	0.47	0.47	U	μg/L
5/6/2019	G-102	Aroclor 1260	0.47	0.47	Ü	µg/L
5/6/2019	G-102	Arsenic, Dissolved	10	10	Ü	µg/L
5/6/2019	G-102	Atrazine	3	3	Ü	μg/L
5/6/2019	G-102	Barium, Dissolved	307	20	_	<u>μg/L</u>
5/6/2019	G-102	Benzene	1.6	1.6	U	μg/L
5/6/2019	G-102	Benzo(a)pyrene	0.12	0.12	U	µg/L
5/6/2019	G-102	Beryllium, Dissolved	0.4	0.4	U	µg/L
5/6/2019	G-102	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/6/2019	G-102	Boron, Dissolved	216	100		μg/L
5/6/2019	G-102	Cadmium, Dissolved	5	5	U	μg/L
5/6/2019	G-102	Calcium and Magnesium Hardness, Dissolved	669000	500		μg/L
5/6/2019	G-102	Calcium, Dissolved	157000	5000		μg/L
5/6/2019	G-102	Carbofuran	2.5	2.5	U	μg/L
5/6/2019	G-102	Carbon tetrachloride	2	2	U	μg/L
5/6/2019	G-102	Chloride, Dissolved	226	1.7		mg/L
5/6/2019	G-102	Chlorobenzene	1.6	1.6	U	μg/L
5/6/2019	G-102	Chloroethane	2.5	2.5	U	μg/L
5/6/2019	G-102	Chromium, Dissolved	10	10	U	μg/L
5/6/2019	G-102	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/6/2019	G-102	cis-Chlordane	0.05	0.05	U	μg/L
5/6/2019	G-102	Cobalt, Dissolved	10	10	U	μg/L
5/6/2019	G-102	Copper, Dissolved	10	10	U	μg/L
5/6/2019	G-102	Dalapon	1	1	U	μg/L
5/6/2019	G-102	Dinoseb	1	1	U	µg/L
5/6/2019	G-102	Dissolved Cyanide	0.01	0.01	U	mg/L
5/6/2019	G-102	Endothall Foodsing	25	25	U	µg/L
5/6/2019	G-102	Endrin	0.1	0.1	U	µg/L
5/6/2019	G-102	Ethylbenzene	1.6	1.6	U	µg/L
5/6/2019 5/6/2019	G-102 G-102	Fluoride, Dissolved	0.5 0.047	0.5 0.047	U	mg/L
	G-102 G-102	gamma-BHC (Lindane)  Heptachlor	0.047			µg/L
5/6/2019 5/6/2019	G-102 G-102	Heptachlor epoxide	0.047	0.047 0.047	U	μg/L μg/l
5/6/2019	G-102 G-102	Hexachlorocyclopentadiene	0.047	0.047	U	μg/L μg/L
5/6/2019	G-102 G-102	Iron, Dissolved	5580	100	U	μg/L μg/L
5/6/2019	G-102 G-102	Lead, Dissolved	7.5	7.5	U	μg/L μg/L
5/6/2019	G-102 G-102	Magnesium, Dissolved	67200	5000	0	μg/L μg/L
5/6/2019	G-102	Manganese, Dissolved	97.3	5		μg/L μg/L
5/6/2019	G-102 G-102	Mercury, Dissolved	0.2	0.2	U	μg/L μg/L
			0.2	0.2	U	μg/L μg/L
	G-102					
5/6/2019 5/6/2019	G-102 G-102	Methoxychlor  Methylene Chloride	1.3	1.3	U	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	G-102	Nitrate, Dissolved	0.02	0.02	U	mg/L
5/6/2019	G-102	Pentachlorophenol	0.34	0.34	U	μg/L
5/6/2019	G-102	Picloram	1	1	U	μg/L
5/6/2019	G-102	Selenium, Dissolved	5	5	U	μg/L
5/6/2019	G-102	Silver, Dissolved	10	10	U	µg/L
5/6/2019 5/6/2019	G-102 G-102	Simazine Styrene	1.7	1.7	U	µg/L
5/6/2019	G-102 G-102	Sulfate, Dissolved	82	4.5	U	μg/L mg/L
5/6/2019	G-102 G-102	Tetrachloroethene	2.1	2.1	U	μg/L
5/6/2019	G-102	Thallium, Dissolved	0.2	0.2	U	μg/L
5/6/2019	G-102	Toluene	1.6	1.6	U	μg/L
5/6/2019	G-102	Total Dissolved Solids Field Filtered	971	5	Ť	mg/L
5/6/2019	G-102	Total Recoverable Phenolics	0.005	0.005	U	mg/L
5/6/2019	G-102	Toxaphene	5	5	U	μg/L
5/6/2019	G-102	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/6/2019	G-102	trans-Chlordane	0.05	0.05	U	μg/L
5/6/2019	G-102	Trichloroethene	1.9	1.9	U	μg/L
5/6/2019	G-102	Vinyl chloride	2.3	2.3	U	μg/L
5/6/2019	G-102	Xylenes, Total	3	3	U	μg/L
5/6/2019	G-102	Zinc, Dissolved	20	20	U	μg/L
5/6/2019	US-01D	1,1,1-Trichloroethane	2.1	2.1	U	μg/L
5/6/2019	US-01D	1,1,2-Trichloroethane	1.9	1.9	U	μg/L
5/6/2019	US-01D	1,1-Dichloroethene	2.5	2.5	U	μg/L
5/6/2019	US-01D	1,2,4-Trichlorobenzene	1	1	U	μg/L
5/6/2019	US-01D	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L
5/6/2019	US-01D	1,2-Dibromoethane	2	2	U	μg/L
5/6/2019	US-01D	1,2-Dichlorobenzene	0.15	0.15	U	µg/L
5/6/2019 5/6/2019	US-01D US-01D	1,2-Dichloroethane	1.7	1.7	U	μg/L
5/6/2019	US-01D	1,2-Dichloropropane 1,4-Dichlorobenzene	0.1	0.1	U	µg/L µg/L
5/6/2019	US-01D	2,4,5-TP (Silvex)	2	2	U	μg/L μg/L
5/6/2019	US-01D	2,4-D	10	10	U	μg/L
5/6/2019	US-01D	Alachlor	1	1	U	μg/L
5/6/2019	US-01D	Aldicarb	2.5	2.5	U*	μg/L
5/6/2019	US-01D	Alkalinity, Total	267	10		mg/L
5/6/2019	US-01D	Ammonia as N	0.81	0.1		mg/L AS N
5/6/2019	US-01D	Antimony, Dissolved	0.6	0.6	U	μg/L
5/6/2019	US-01D	Aroclor 1016	0.47	0.47	U	μg/L
5/6/2019	US-01D	Aroclor 1221	0.47	0.47	U	μg/L
5/6/2019	US-01D	Aroclor 1232	0.47	0.47	U	μg/L
5/6/2019	US-01D	Aroclor 1242	0.47	0.47	U	μg/L
5/6/2019	US-01D	Aroclor 1248	0.47	0.47	U	μg/L
5/6/2019	US-01D	Aroclor 1254	0.47	0.47	U	μg/L
5/6/2019	US-01D	Aroclor 1260	0.47	0.47	U	μg/L
5/6/2019	US-01D	Arsenic, Dissolved	10	10	U	µg/L
5/6/2019 5/6/2019	US-01D US-01D	Atrazine Rarium Dissolved	3 200	3 200	U	µg/L
5/6/2019	US-01D	Barium, Dissolved Benzene	1.6	1.6	U	µg/L µg/L
5/6/2019	US-01D	Benzene Benzo(a)pyrene	0.12	0.12	U	μg/L μg/L
5/6/2019	US-01D	Beryllium, Dissolved	0.12	0.12	U	μg/L μg/L
5/6/2019	US-01D	Biochemical Oxygen Demand	3	2		mg/L
5/6/2019	US-01D	Bis(2-ethylhexyl) phthalate	5	4.8		μg/L
5/6/2019	US-01D	Boron, Dissolved	252	100	1	µg/L
5/6/2019	US-01D	Cadmium, Dissolved	5	5	U	µg/L
5/6/2019	US-01D	Calcium and Magnesium Hardness, Dissolved	349000	500		μg/L
5/6/2019	US-01D	Calcium, Dissolved	59200	5000		μg/L
5/6/2019	US-01D	Carbofuran	2.5	2.5	U	μg/L
5/6/2019	US-01D	Carbon tetrachloride	2	2	U	μg/L
5/6/2019	US-01D	Chloride, Dissolved	15.9	1		mg/L
5/6/2019	US-01D	Chlorobenzene	1.6	1.6	U	μg/L
5/6/2019	US-01D	Chloroethane	2.5	2.5	U	μg/L
5/6/2019	US-01D	Chromium, Dissolved	10	10	U	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	US-01D	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/6/2019	US-01D	cis-Chlordane	0.05	0.05	U	μg/L
5/6/2019	US-01D	Cobalt, Dissolved	10	10	U	µg/L
5/6/2019	US-01D	Copper, Dissolved	10	10	U	μg/L
5/6/2019	US-01D	Dalapon	1	1	U	μg/L
5/6/2019	US-01D	Dinoseb	1	1	U	μg/L
5/6/2019	US-01D	Dissolved Cyanide	0.01	0.01	U	mg/L
5/6/2019	US-01D	<u>Endothall</u>	25	25	U	μg/L
5/6/2019	US-01D	<u>Endrin</u>	0.1	0.1	U	μg/L
5/6/2019	US-01D	Ethylbenzene	1.6	1.6	U	μg/L
5/6/2019	US-01D	Fluoride, Dissolved	0.55	0.5		mg/L
5/6/2019	US-01D	gamma-BHC (Lindane)	0.05	0.05	U	μg/L
5/6/2019	US-01D	Heptachlor	0.05	0.05	U	μg/L
5/6/2019	US-01D US-01D	Heptachlor epoxide	0.05	0.05 0.7	U	μg/L
5/6/2019		Hexachlorocyclopentadiene			U	μg/L
5/6/2019 5/6/2019	US-01D US-01D	Iron, Dissolved Lead, Dissolved	423 7.5	100 7.5	U	μg/L
5/6/2019	US-01D	Magnesium, Dissolved	48900	5000	U	μg/L μg/L
5/6/2019	US-01D	Magnesion, Dissolved  Manganese, Dissolved	29.5	5		
5/6/2019	US-01D	Mercury, Dissolved	0.2	0.2	U	μg/L μg/L
5/6/2019	US-01D	Methoxychlor	0.2	0.5	U	μg/L μg/L
5/6/2019	US-01D	Methylene Chloride	1.3	1.3	U	μg/L μg/L
5/6/2019	US-01D	Nickel, Dissolved	1.0	1.0	U	μg/L
5/6/2019	US-01D	Nitrate, Dissolved	0.029	0.02	0	mg/L AS N
5/6/2019	US-01D	Nitrite	0.027	0.02	U	mg/L AS N
5/6/2019	US-01D	Nitrogen, Nitrate	0.02	0.02	U	mg/L AS N
5/6/2019	US-01D	Orthophosphate	0.25	0.02		mg/L AS P
5/6/2019	US-01D	Pentachlorophenol	0.34	0.34	U	µg/L
5/6/2019	US-01D	Picloram	1	1	Ü	µg/L
5/6/2019	US-01D	Selenium, Dissolved	5	5	Ü	µg/L
5/6/2019	US-01D	Silver, Dissolved	10	10	U	μg/L
5/6/2019	US-01D	Simazine	4	4	U	μg/L
5/6/2019	US-01D	Styrene	1.7	1.7	U	µg/L
5/6/2019	US-01D	Sulfate	156	7.5		mg/L
5/6/2019	US-01D	Sulfate, Dissolved	165	7.5		mg/L
5/6/2019	US-01D	Sulfide	1	1	U	mg/L
5/6/2019	US-01D	Tetrachloroethene	2.1	2.1	U	μg/L
5/6/2019	US-01D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/6/2019	US-01D	Toluene	1.6	1.6	U	μg/L
5/6/2019	US-01D	Total Dissolved Solids Field Filtered	461	5		mg/L
5/6/2019	US-01D	Total Kjeldahl Nitrogen	0.91	0.15		mg/L AS N
5/6/2019	US-01D	Total Organic Carbon	1.8	1		mg/L
5/6/2019	US-01D	Total Recoverable Phenolics	0.011	0.005		mg/L
5/6/2019	US-01D	Toxaphene	5	5	U	μg/L
5/6/2019	US-01D	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/6/2019	US-01D	trans-Chlordane	0.05	0.05	U	μg/L
5/6/2019	US-01D	Trichloroethene	1.9	1.9	U	μg/L
5/6/2019	US-01D	Vinyl chloride	2.3	2.3	U	μg/L
5/6/2019	US-01D	Xylenes, Total	3	3	U	μg/L
5/6/2019	US-01D	Zinc, Dissolved	20	20	U	µg/L
5/6/2019	US-01D	Ethane	15	15	UHRA	μg/L
5/6/2019	US-01D	Ethene	13	13	UHRA	µg/L
5/6/2019	US-01D	Methane	8	8	U H RA	μg/L
5/6/2019	US-04D	1,1,1-Trichloroethane	2.1	2.1	U*	μg/L
5/6/2019	US-04D	1,1,2-Trichloroethane	1.9	1.9	U	μg/L
5/6/2019 5/6/2019	US-04D US-04D	1,1-Dichloroethene	2.5	2.5	U	μg/L
5/6/2019	US-04D US-04D	1,2,4-Trichlorobenzene	5	5	U	μg/L
	US-04D US-04D	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane	2		U *	μg/L
5/6/2019 5/6/2019	US-04D US-04D	1,2-Dibromoethane 1,2-Dichlorobenzene	0.15	0.15	_	μg/L ug/l
3/0/2019	US-04D		0.15	0.15	U	μg/L μg/L
5/6/2019		1,2-Dichloroethane				

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	US-04D	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/6/2019	US-04D	2,4,5-TP (Silvex)	2	2	U	μg/L
5/6/2019	US-04D	2,4-D	10	10	U	μg/L
5/6/2019	US-04D	Alachlor	1	1	U U*	μg/L
5/6/2019	US-04D	Aldicarb	2.5	2.5	U *	µg/L
5/6/2019 5/6/2019	US-04D US-04D	Alkalinity, Total Ammonia as N	222 0.75	10 0.1		mg/L mg/L AS N
5/6/2019	US-04D	Antimony, Dissolved	0.75	0.6	U	µg/L AS N
5/6/2019	US-04D	Ariminorly, dissolved  Aroclor 1016	0.6	0.47	U	μg/L μg/L
5/6/2019	US-04D	Aroclor 1010	0.47	0.47	U	μg/L
5/6/2019	US-04D	Aroclor 1232	0.47	0.47	U	μg/L
5/6/2019	US-04D	Aroclor 1242	0.47	0.47	Ü	µg/L
5/6/2019	US-04D	Aroclor 1248	0.47	0.47	Ü	µg/L
5/6/2019	US-04D	Aroclor 1254	0.47	0.47	U	µg/L
5/6/2019	US-04D	Aroclor 1260	0.47	0.47	U	μg/L
5/6/2019	US-04D	Arsenic, Dissolved	10	10	U	µg/L
5/6/2019	US-04D	Atrazine	3	3	U	μg/L
5/6/2019	US-04D	Barium, Dissolved	200	200	U	μg/L
5/6/2019	US-04D	Benzene	1.6	1.6	U	μg/L
5/6/2019	US-04D	Benzo(a)pyrene	0.12	0.12	U	μg/L
5/6/2019	US-04D	Beryllium, Dissolved	0.4	0.4	U	μg/L
5/6/2019	US-04D	Biochemical Oxygen Demand	2.4	2		mg/L
5/6/2019	US-04D	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/6/2019	US-04D	Boron, Dissolved	422	100		μg/L
5/6/2019	US-04D	Cadmium, Dissolved	5	5	U	μg/L
5/6/2019	US-04D	Calcium and Magnesium Hardness, Dissolved	194000	500		μg/L
5/6/2019	US-04D	Calcium, Dissolved	35300	5000		μg/L
5/6/2019	US-04D	Carbofuran	2.5	2.5	U	μg/L
5/6/2019	US-04D	Carbon tetrachloride	2	2	U *	μg/L
5/6/2019	US-04D	Chloride, Dissolved	33.4	1		mg/L
5/6/2019	US-04D	Chlorobenzene	1.6	1.6	U	μg/L
5/6/2019	US-04D US-04D	Chloroethane	2.5	2.5 10	_	µg/L
5/6/2019 5/6/2019	US-04D	Chromium, Dissolved cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/6/2019	US-04D	cis-Chlordane	0.05	0.05	U	μg/L μg/L
5/6/2019	US-04D	Cobalt, Dissolved	10	10	U	μg/L μg/L
5/6/2019	US-04D	Copper, Dissolved	10	10	U	μg/L
5/6/2019	US-04D	Dalapon	1	1	U	μg/L
5/6/2019	US-04D	Dinoseb	1	1	U	µg/L
5/6/2019	US-04D	Dissolved Cyanide	0.01	0.01	Ü	mg/L
5/6/2019	US-04D	Endothall	25	25	Ü	µg/L
5/6/2019	US-04D	Endrin	0.1	0.1	U	μg/L
5/6/2019	US-04D	Ethylbenzene	1.6	1.6	U	μg/L
5/6/2019	US-04D	Fluoride, Dissolved	0.92	0.5		mg/L
5/6/2019	US-04D	gamma-BHC (Lindane)	0.05	0.05	U	μg/L
5/6/2019	US-04D	Heptachlor	0.05	0.05	U	μg/L
5/6/2019	US-04D	Heptachlor epoxide	0.05	0.05	U	μg/L
5/6/2019	US-04D	Hexachlorocyclopentadiene	0.7	0.7	U	μg/L
5/6/2019	US-04D	Iron, Dissolved	100	100	U	μg/L
5/6/2019	US-04D	Lead, Dissolved	7.5	7.5	U	μg/L
5/6/2019	US-04D	Magnesium, Dissolved	25700	5000	1	μg/L
5/6/2019	US-04D	Manganese, Dissolved	14.8	5	1	µg/L
5/6/2019	US-04D	Mercury, Dissolved	0.2	0.2	U	μg/L
5/6/2019 5/6/2019	US-04D US-04D	Methoxychlor Methylopo Chlorido	0.5	0.5	U	μg/L
5/6/2019	US-04D US-04D	Methylene Chloride Nickel, Dissolved	1.3	1.3 10	U	μg/L
5/6/2019	US-04D	Nicker, Dissolved Nitrate, Dissolved	0.02	0.02	U	μg/L mg/L AS N
5/6/2019	US-04D	Nitrite	0.02	0.02	U	mg/L AS N
5/6/2019	US-04D	Nitrogen, Nitrate	0.02	0.02	U	mg/L AS N
5/6/2019	US-04D	Orthophosphate	0.02	0.02	U	mg/L AS P
5/6/2019	US-04D	Pentachlorophenol	0.47	0.02	U	µg/L
0/0/201/	US-04D	Picloram	1	1	U	μg/L μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	US-04D	Selenium, Dissolved	5	5	U	μg/L
5/6/2019	US-04D	Silver, Dissolved	10	10	U	μg/L
5/6/2019	US-04D	Simazine	4	4	U	μg/L
5/6/2019	US-04D	Styrene Sulfate	1.7	1.7	U	µg/L
5/6/2019 5/6/2019	US-04D US-04D	Sulfate, Dissolved	44.5 47.3	3		mg/L
5/6/2019	US-04D	Sulfide	47.3	1	U	mg/L mg/L
5/6/2019	US-04D	Tetrachloroethene	2.1	2.1	U	µg/L
5/6/2019	US-04D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/6/2019	US-04D	Toluene	1.6	1.6	U	µg/L
5/6/2019	US-04D	Total Dissolved Solids Field Filtered	328	5		mg/L
5/6/2019	US-04D	Total Kjeldahl Nitrogen	0.8	0.15		mg/L AS N
5/6/2019	US-04D	Total Organic Carbon	2.1	1		mg/L
5/6/2019	US-04D	Total Recoverable Phenolics	0.005	0.005	U	mg/L
5/6/2019	US-04D	Toxaphene	5	5	U	μg/L
5/6/2019	US-04D	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/6/2019	US-04D	trans-Chlordane	0.05	0.05	U	μg/L
5/6/2019	US-04D	Trichloroethene	1.9	1.9	U	μg/L
5/6/2019	US-04D	Vinyl chloride	2.3	2.3	U	μg/L
5/6/2019	US-04D	Xylenes, Total	3	3	U	μg/L
5/6/2019	US-04D	Zinc, Dissolved	20	20	U	μg/L
5/6/2019	US-04D	Ethane	15	15	UHRA	μg/L
5/6/2019	US-04D	Ethene	13	13	UHRA	μg/L
5/6/2019	US-04D	Methane	29	8	HRA	μg/L
5/6/2019	US-05D	1,1,1-Trichloroethane	2.1	2.1	U *	μg/L
5/6/2019	US-05D	1,1,2-Trichloroethane	1.9	1.9	U	μg/L
5/6/2019	US-05D	1,1-Dichloroethene	2.5	2.5	U	μg/L
5/6/2019 5/6/2019	US-05D	1,2,4-Trichlorobenzene	5	1	U	μg/L
5/6/2019	US-05D US-05D	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane	2	5 2	U *	μg/L μg/L
5/6/2019	US-05D	1,2-Dishornoemane	0.15	0.15	U	μg/L μg/L
5/6/2019	US-05D	1,2-Dichloroethane	1	1	U	μg/L
5/6/2019	US-05D	1,2-Dichloropropane	1.7	1.7	U	μg/L
5/6/2019	US-05D	1,4-Dichlorobenzene	0.1	0.1	Ü	µg/L
5/6/2019	US-05D	2,4,5-TP (Silvex)	2	2	U	µg/L
5/6/2019	US-05D	2,4-D	10	10	U	μg/L
5/6/2019	US-05D	Alachlor	1	1	U	µg/L
5/6/2019	US-05D	Aldicarb	2.5	2.5	U *	μg/L
5/6/2019	US-05D	Alkalinity, Total	205	10		mg/L
5/6/2019	US-05D	Ammonia as N	0.26	0.1		mg/L AS N
5/6/2019	US-05D	Antimony, Dissolved	0.6	0.6	U	μg/L
5/6/2019	US-05D	Aroclor 1016	0.47	0.47	U	μg/L
5/6/2019	US-05D	Aroclor 1221	0.47	0.47	U	μg/L
5/6/2019	US-05D	Aroclor 1232	0.47	0.47	U	μg/L
5/6/2019	US-05D	Aroclor 1242	0.47	0.47	U	µg/L
5/6/2019	US-05D	Aroclor 1248	0.47	0.47	U	μg/L
5/6/2019	US-05D	Aroclor 1254	0.47	0.47	U	μg/L
5/6/2019 5/6/2019	US-05D US-05D	Aroclor 1260 Arsenic, Dissolved	0.47	0.47 10	U	μg/L
5/6/2019	US-05D	Arsenic, Dissolved Atrazine	3	3	U	μg/L μg/L
5/6/2019	US-05D	Barium, Dissolved	200	200	U	μg/L μg/L
5/6/2019	US-05D	Benzene	1.6	1.6	U	μg/L μg/L
5/6/2019	US-05D	Benzo(a)pyrene	0.12	0.12	U	μg/L
5/6/2019	US-05D	Beryllium, Dissolved	0.4	0.4	U	µg/L
5/6/2019	US-05D	Biochemical Oxygen Demand	2	2	U	mg/L
5/6/2019	US-05D	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/6/2019	US-05D	Boron, Dissolved	516	100	1 -	μg/L
5/6/2019	US-05D	Cadmium, Dissolved	5	5	U	µg/L
5/6/2019	US-05D	Calcium and Magnesium Hardness, Dissolved	149000	500		µg/L
5/6/2019	US-05D	Calcium, Dissolved	25400	5000		μg/L
5/6/2019	US-05D	Carbofuran	2.5	2.5	U	μg/L
5/6/2019	US-05D	Carbon tetrachloride	2	2	U *	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	US-05D	Chloride, Dissolved	2.9	1		mg/L
5/6/2019	US-05D	Chlorobenzene	1.6	1.6	U	μg/L
5/6/2019	US-05D	Chloroethane	2.5	2.5	U	μg/L
5/6/2019	US-05D	Chromium, Dissolved	10	10	U	μg/L
5/6/2019	US-05D	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/6/2019	US-05D	cis-Chlordane	0.05	0.05	U	μg/L
5/6/2019	US-05D	Cobalt, Dissolved	10	10	U	μg/L
5/6/2019	US-05D	Copper, Dissolved	10	10	U	μg/L
5/6/2019	US-05D	Dalapon	1		U	μg/L
5/6/2019	US-05D	Dinoseb	0.01	1	U	μg/L
5/6/2019	US-05D	Dissolved Cyanide	0.01	0.01	U	mg/L
5/6/2019	US-05D	<u>Endothall</u>	25	25	U	μg/L
5/6/2019	US-05D	Endrin	0.1	0.1	U	μg/L
5/6/2019	US-05D US-05D	Ethylbenzene	1.6	1.6 0.5	U	μg/L
5/6/2019		Fluoride, Dissolved				mg/L
5/6/2019 5/6/2019	US-05D US-05D	gamma-BHC (Lindane) Heptachlor	0.05 0.05	0.05 0.05	U	μg/L
5/6/2019	US-05D	Heptachlor epoxide	0.05	0.05	U	μg/L μg/L
5/6/2019	US-05D	Hexachlorocyclopentadiene	0.03	0.03	U	μg/L μg/L
5/6/2019	US-05D	Iron, Dissolved	100	100	U	μg/L μg/L
5/6/2019	US-05D	Lead, Dissolved	7.5	7.5	U	μg/L μg/L
5/6/2019	US-05D	Magnesium, Dissolved	20800	5000	U	μg/L μg/L
5/6/2019	US-05D	Manganese, Dissolved	14.3	5		μg/L
5/6/2019	US-05D	Mercury, Dissolved	0.2	0.2	U	μg/L
5/6/2019	US-05D	Methoxychlor	0.5	0.5	U	μg/L
5/6/2019	US-05D	Methylene Chloride	1.3	1.3	U	μg/L
5/6/2019	US-05D	Nickel, Dissolved	10	10	U	µg/L
5/6/2019	US-05D	Nitrate, Dissolved	0.02	0.02	Ü	mg/L AS N
5/6/2019	US-05D	Nitrite	0.02	0.02	Ü	mg/L AS N
5/6/2019	US-05D	Nitrogen, Nitrate	0.02	0.02	Ü	mg/L AS N
5/6/2019	US-05D	Orthophosphate	0.096	0.02		mg/L AS P
5/6/2019	US-05D	Pentachlorophenol	0.34	0.34	U	μg/L
5/6/2019	US-05D	Picloram	1	1	U	µg/L
5/6/2019	US-05D	Selenium, Dissolved	5	5	U	μg/L
5/6/2019	US-05D	Silver, Dissolved	10	10	U	μg/L
5/6/2019	US-05D	Simazine	4	4	U	μg/L
5/6/2019	US-05D	Styrene	1.7	1.7	U	μg/L
5/6/2019	US-05D	Sulfate	63.7	3		mg/L
5/6/2019	US-05D	Sulfate, Dissolved	66.5	3		mg/L
5/6/2019	US-05D	Sulfide	1	1	U	mg/L
5/6/2019	US-05D	Tetrachloroethene	2.1	2.1	U	μg/L
5/6/2019	US-05D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/6/2019	US-05D	Toluene	1.6	1.6	U	μg/L
5/6/2019	US-05D	Total Dissolved Solids Field Filtered	275	5		mg/L
5/6/2019	US-05D	Total Kjeldahl Nitrogen	0.29	0.15		mg/L AS N
5/6/2019	US-05D	Total Organic Carbon	1.2	1		mg/L
5/6/2019	US-05D	Total Recoverable Phenolics	0.005	0.005	U	mg/L
5/6/2019	US-05D	Toxaphene	5	5	U	μg/L
5/6/2019	US-05D	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/6/2019	US-05D	trans-Chlordane	0.05	0.05	U	μg/L
5/6/2019	US-05D	Trichloroethene	1.9	1.9	U	μg/L
5/6/2019	US-05D US-05D	Vinyl chloride	2.3	2.3	U	μg/L
5/6/2019 5/6/2019	US-05D US-05D	Xylenes, Total	20	20	U	μg/L
5/6/2019	US-05D	Zinc, Dissolved Ethane	15	15		μg/L
5/6/2019			13	13	UHRA	μg/L
5/6/2019	US-05D US-05D	Ethene Methane	8	8	UHRA	μg/L
5/6/2019	W-08D		2.1	2.1	U H RA	μg/L
		1,1,1-Trichloroethane 1,1,2-Trichloroethane				μg/L
5/6/2019 5/6/2019	W-08D W-08D	1,1,2-tricnioroethane	1.9 2.5	1.9 2.5	U	μg/L ug/l
2/0//017				2.5		μg/L
5/6/2019	W-08D	1,2,4-Trichlorobenzene	1 1	1	U	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	W-08D	1,2-Dibromoethane	2	2	U	μg/L
5/6/2019	W-08D	1,2-Dichlorobenzene	0.15	0.15	U	μg/L
5/6/2019	W-08D	1,2-Dichloroethane	1	1	U	μg/L
5/6/2019	W-08D	1,2-Dichloropropane	1.7	1.7	U	μg/L
5/6/2019	W-08D	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/6/2019	W-08D	2,4,5-TP (Silvex)	2	2	UH	μg/L
5/6/2019	W-08D	2,4-D	10	10	UH	μg/L
5/6/2019	W-08D	Alachlor	0.5	0.5	U *	µg/L
5/6/2019	W-08D W-08D	Aldicarb	2.5 403	2.5 10	0 *	µg/L
5/6/2019 5/6/2019	W-08D	Alkalinity, Total Ammonia as N	0.49	0.1	F1	mg/L mg/L AS N
5/6/2019	W-08D	Antimony, Dissolved	0.47	0.6	U	µg/L
5/6/2019	W-08D	Arimony, bissolved  Aroclor 1016	0.8	0.47	U	μg/L μg/L
5/6/2019	W-08D	Aroclor 1221	0.47	0.47	U	µg/L
5/6/2019	W-08D	Aroclor 1232	0.47	0.47	U	μg/L
5/6/2019	W-08D	Aroclor 1242	0.47	0.47	U	µg/L
5/6/2019	W-08D	Aroclor 1248	0.47	0.47	U	μg/L
5/6/2019	W-08D	Aroclor 1254	0.47	0.47	Ü	μg/L
5/6/2019	W-08D	Aroclor 1260	0.47	0.47	Ü	µg/L
5/6/2019	W-08D	Arsenic, Dissolved	10	10	Ü	µg/L
5/6/2019	W-08D	Atrazine	3	3	Ü	µg/L
5/6/2019	W-08D	Barium, Dissolved	200	200	Ü	µg/L
5/6/2019	W-08D	Benzene	1.6	1.6	U	µg/L
5/6/2019	W-08D	Benzo(a)pyrene	0.12	0.12	U	µg/L
5/6/2019	W-08D	Beryllium, Dissolved	0.4	0.4	U	µg/L
5/6/2019	W-08D	Biochemical Oxygen Demand	2	2	UΗ	mg/L
5/6/2019	W-08D	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/6/2019	W-08D	Boron, Dissolved	100	100	U	μg/L
5/6/2019	W-08D	Cadmium, Dissolved	5	5	U	μg/L
5/6/2019	W-08D	Calcium and Magnesium Hardness, Dissolved	489000	500		μg/L
5/6/2019	W-08D	Calcium, Dissolved	112000	5000		μg/L
5/6/2019	W-08D	Carbofuran	2.5	2.5	U	μg/L
5/6/2019	W-08D	Carbon tetrachloride	2	2	U	μg/L
5/6/2019	W-08D	Chloride, Dissolved	119	1		mg/L
5/6/2019	W-08D	Chlorobenzene	1.6	1.6	U	μg/L
5/6/2019	W-08D	Chloroethane	2.5	2.5	U	μg/L
5/6/2019	W-08D	Chromium, Dissolved	10	10	U	μg/L
5/6/2019	W-08D	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/6/2019	W-08D	cis-Chlordane	0.05	0.05	U	μg/L
5/6/2019	W-08D	Cobalt, Dissolved	10	10	U	μg/L
5/6/2019	W-08D	Copper, Dissolved	10	10	U	μg/L
5/6/2019	W-08D	Dalapon	1	1	UH	μg/L
5/6/2019	W-08D	Dinoseb	0.01	0.01	UH	µg/L
5/6/2019 5/6/2019	W-08D W-08D	Dissolved Cyanide  Endothall	0.01 25	0.01 25	U	mg/L
5/6/2019	W-08D	Endothali Endrin	0.1	0.1	U	µg/L
5/6/2019	W-08D	Ethylbenzene	1.6	1.6	U	μg/L
5/6/2019	W-08D	Fluoride, Dissolved	0.5	0.5	U	μg/L mg/L
5/6/2019	W-08D	gamma-BHC (Lindane)	0.05	0.05	U	µg/L
5/6/2019	W-08D	Heptachlor	0.05	0.05	U	μg/L μg/L
5/6/2019	W-08D	Heptachlor epoxide	0.05	0.05	U	μg/L μg/L
5/6/2019	W-08D	Hexachlorocyclopentadiene	0.03	0.03	U	μg/L μg/L
5/6/2019	W-08D	Iron, Dissolved	4320	100		μg/L μg/L
5/6/2019	W-08D	Lead, Dissolved	7.5	7.5	U	μg/L
5/6/2019	W-08D	Magnesium, Dissolved	51200	5000		μg/L
5/6/2019	W-08D	Manganese, Dissolved	210	5		μg/L
5/6/2019	W-08D	Mercury, Dissolved	0.2	0.2	U	μg/L
5/6/2019	W-08D	Methoxychlor Methoxychlor	0.5	0.5	U	μg/L
5/6/2019	W-08D	Methylene Chloride	1.3	1.3	U	μg/L
5/6/2019	W-08D	Nickel, Dissolved	10	10	U	μg/L
5/6/2019	W-08D	Nitrate, Dissolved	0.02	0.02	Ü	mg/L AS N
5/6/2019	W-08D	Nitrite	0.02	0.02	Ü	mg/L AS N

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	W-08D	Nitrogen, Nitrate	0.02	0.02	U	mg/L AS N
5/6/2019	W-08D	Orthophosphate	0.02	0.02	UΗ	mg/L AS P
5/6/2019	W-08D	Pentachlorophenol	0.34	0.34	U	μg/L
5/6/2019	W-08D	Picloram	1	1	UH	μg/L
5/6/2019	W-08D	Selenium, Dissolved	5	5	U	μg/L
5/6/2019	W-08D	Silver, Dissolved	10	10	U	μg/L
5/6/2019	W-08D	Simazine	4	4	U	μg/L
5/6/2019	W-08D	Styrene	1.7	1.7	U	μg/L
5/6/2019	W-08D	Sulfate	1.5	1.5	U	mg/L
5/6/2019	W-08D	Sulfate, Dissolved	1.5	1.5	U F1	mg/L
5/6/2019	W-08D	Sulfide	1	1	U	mg/L
5/6/2019	W-08D	Tetrachloroethene	2.1	2.1	U	μg/L
5/6/2019	W-08D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/6/2019	W-08D	Toluene	1.6	1.6	U	μg/L
5/6/2019	W-08D	Total Dissolved Solids Field Filtered	586	5		mg/L
5/6/2019	W-08D	Total Kjeldahl Nitrogen	0.92 5.7	0.15		mg/L AS N
5/6/2019	W-08D	Total Organic Carbon		0.005	F1	mg/L
5/6/2019	W-08D W-08D	Total Recoverable Phenolics	0.006	0.005	F1 U	mg/L
5/6/2019		Toxaphene	5 1.9	5		μg/L
5/6/2019	W-08D W-08D	trans-1,2-Dichloroethene trans-Chlordane	_	1.9	U	µg/L
5/6/2019			0.05	0.05	U	µg/L
5/6/2019	W-08D	Trichloroethene			U	μg/L
5/6/2019	W-08D W-08D	Vinyl chloride	2.3	2.3	U	μg/L
5/6/2019 5/6/2019	W-08D	Xylenes, Total	20	20	U	μg/L
5/6/2019	W-08D	Zinc, Dissolved Ethane	33	33	UHRA	μg/L
	W-08D	Ethene	33	33	UHRA	μg/L
5/6/2019 5/6/2019	W-08D	Methane	610	22	HRA	μg/L μg/L
5/7/2019	PZ-03U	1,1,1-Trichloroethane	2.1	2.1	U	
5/7/2019	PZ-03U	1,1,2-Trichloroethane	1.9	1.9	U	µg/L µg/L
5/7/2019	PZ-03U	1,1-Dichloroethene	2.5	2.5	U	_
5/7/2019	PZ-03U	1,7-bichlorobenzene	2.3	2.3	U	μg/L μg/L
5/7/2019	PZ-03U	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L μg/L
5/7/2019	PZ-03U	1,2-Dibromoethane	2	2	U	μg/L μg/L
5/7/2019	PZ-03U	1,2-Diplomoemane	0.15	0.15	U	μg/L
5/7/2019	PZ-03U	1,2-Dichloroethane	1	1	U	μg/L μg/L
5/7/2019	PZ-03U	1,2-Dichloropropane	1.7	1.7	U	μg/L
5/7/2019	PZ-03U	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/7/2019	PZ-03U	2,4,5-TP (Silvex)	2	2	U	µg/L
5/7/2019	PZ-03U	2,4-D	10	10	Ü	μg/L
5/7/2019	PZ-03U	Alachlor	1	1	U	µg/L
5/7/2019	PZ-03U	Aldicarb	2.5	2.5	U*	µg/L
5/7/2019	PZ-03U	Antimony, Dissolved	0.6	0.6	Ü	µg/L
5/7/2019	PZ-03U	Aroclor 1016	0.47	0.47	Ü	µg/L
5/7/2019	PZ-03U	Aroclor 1221	0.47	0.47	Ü	μg/L
5/7/2019	PZ-03U	Aroclor 1232	0.47	0.47	U	µg/L
5/7/2019	PZ-03U	Aroclor 1242	0.47	0.47	U	µg/L
5/7/2019	PZ-03U	Aroclor 1248	0.47	0.47	U	μg/L
5/7/2019	PZ-03U	Aroclor 1254	0.47	0.47	U	μg/L
5/7/2019	PZ-03U	Aroclor 1260	0.47	0.47	U	μg/L
5/7/2019	PZ-03U	Arsenic, Dissolved	10	10	U	μg/L
5/7/2019	PZ-03U	Atrazine	3	3	U	μg/L
5/7/2019	PZ-03U	Barium, Dissolved	200	20		μg/L
5/7/2019	PZ-03U	Benzene	1.6	1.6	U	μg/L
5/7/2019	PZ-03U	Benzo(a)pyrene	0.12	0.12	U	μg/L
5/7/2019	PZ-03U	Beryllium, Dissolved	0.4	0.4	U	μg/L
5/7/2019	PZ-03U	Bis(2-ethylhexyl) phthalate	10	4.8		μg/L
5/7/2019	PZ-03U	Boron, Dissolved	100	100	U	μg/L
5/7/2019	PZ-03U	Cadmium, Dissolved	5	5	U	μg/L
5/7/2019	PZ-03U	Calcium and Magnesium Hardness, Dissolved	476000	500		μg/L
5/7/2019	PZ-03U	Calcium, Dissolved	112000	5000		μg/L
5/7/2019	PZ-03U	Carbofuran	2.5	2.5	U	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	PZ-03U	Carbon tetrachloride	2	2	U	μg/L
5/7/2019	PZ-03U	Chloride, Dissolved	137	1.7		mg/L
5/7/2019	PZ-03U	Chlorobenzene	1.6	1.6	U	μg/L
5/7/2019	PZ-03U	Chloroethane	2.5	2.5	U	μg/L
5/7/2019	PZ-03U	Chromium, Dissolved	10	10	U	µg/L
5/7/2019	PZ-03U	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/7/2019	PZ-03U	cis-Chlordane	0.05	0.05	U	µg/L
5/7/2019	PZ-03U	Cobalt, Dissolved	10	10	U	µg/L
5/7/2019	PZ-03U	Copper, Dissolved	10	10	U	μg/L
5/7/2019	PZ-03U	Dalapon	1	1	U	μg/L
5/7/2019	PZ-03U	Dinoseb	1	1	U	μg/L
5/7/2019	PZ-03U	Dissolved Cyanide	0.01	0.01	U	mg/L
5/7/2019	PZ-03U	Endothall	25	25	U *	μg/L
5/7/2019	PZ-03U	<u>Endrin</u>	0.1	0.1	U	μg/L
5/7/2019	PZ-03U	Ethylbenzene	1.6	1.6	U	μg/L
5/7/2019	PZ-03U	Fluoride, Dissolved	0.5	0.5	U	mg/L
5/7/2019	PZ-03U	gamma-BHC (Lindane)	0.047	0.047	U	μg/L
5/7/2019	PZ-03U	Heptachlor	0.047	0.047	U	μg/L
5/7/2019	PZ-03U	Heptachlor epoxide	0.047	0.047	U	μg/L
5/7/2019	PZ-03U	Hexachlorocyclopentadiene	0.7	0.7	U	μg/L
5/7/2019	PZ-03U	Iron, Dissolved	5060	100		μg/L
5/7/2019	PZ-03U	Lead, Dissolved	7.5	7.5	U	μg/L
5/7/2019	PZ-03U	Magnesium, Dissolved	47700	5000		μg/L
5/7/2019	PZ-03U	Manganese, Dissolved	112	5		μg/L
5/7/2019	PZ-03U	Mercury, Dissolved	0.2	0.2	U	μg/L
5/7/2019	PZ-03U	Methoxychlor	0.5	0.5	U	μg/L
5/7/2019	PZ-03U	Methylene Chloride	1.3	1.3	U	μg/L
5/7/2019	PZ-03U	Nickel, Dissolved	10	10	U	μg/L
5/7/2019	PZ-03U	Nitrate, Dissolved	0.02	0.02	U	mg/L
5/7/2019	PZ-03U	Pentachlorophenol	0.34	0.34	U	μg/L
5/7/2019	PZ-03U	Picloram Picas I van de		-	U	μg/L
5/7/2019	PZ-03U PZ-03U	Selenium, Dissolved	5 10	5 10	U	μg/L
5/7/2019	PZ-030 PZ-03U	Silver, Dissolved Simazine			U	µg/L
5/7/2019 5/7/2019	PZ-03U		1.7	1.7	U	μg/L
5/7/2019	PZ-03U	Styrene Sulfate, Dissolved	1.7	1.7	U F1	µg/L
5/7/2019	PZ-03U	Tetrachloroethene	2.1	2.1	U	mg/L μg/L
5/7/2019	PZ-03U	Thallium, Dissolved	0.2	0.2	U	μg/L μg/L
5/7/2019	PZ-03U	Toluene	1.6	1.6	U	μg/L μg/L
5/7/2019	PZ-03U	Total Dissolved Solids Field Filtered	589	5	0	mg/L
5/7/2019	PZ-03U	Total Recoverable Phenolics	0.008	0.005		mg/L
5/7/2019	PZ-03U	Toxaphene	5	5	U	μg/L
5/7/2019	PZ-03U	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/7/2019	PZ-03U	trans-Chlordane	0.05	0.05	U	µg/L
5/7/2019	PZ-03U	Trichloroethene	1.9	1.9	Ü	µg/L
5/7/2019	PZ-03U	Vinyl chloride	2.3	2.3	U	µg/L
5/7/2019	PZ-03U	Xylenes, Total	3	3	U	μg/L
5/7/2019	PZ-03U	Zinc, Dissolved	20	20	U	µg/L
5/7/2019	R-01D	1,1,1-Trichloroethane	2.1	2.1	Ü	µg/L
5/7/2019	R-01D	1,1,2-Trichloroethane	1.9	1.9	Ü	μg/L
5/7/2019	R-01D	1,1-Dichloroethene	2.5	2.5	Ü	μg/L
5/7/2019	R-01D	1,2,4-Trichlorobenzene	1	1	U	μg/L
5/7/2019	R-01D	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L
5/7/2019	R-01D	1,2-Dibromoethane	2	2	U	μg/L
5/7/2019	R-01D	1,2-Dichlorobenzene	0.15	0.15	U	μg/L
5/7/2019	R-01D	1,2-Dichloroethane	1	1	U	μg/L
5/7/2019	R-01D	1,2-Dichloropropane	1.7	1.7	U	μg/L
5/7/2019	R-01D	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/7/2019	R-01D	2,4,5-TP (Silvex)	2	2	U	µg/L
5/7/2019	R-01D	2,4-D	10	10	U	μg/L
5/7/2019	R-01D	Alachlor	1	1	U	μg/L
5/7/2019	R-01D	Aldicarb	2.5	2.5	U*	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	R-01D	Alkalinity, Total	300	10		mg/L
5/7/2019	R-01D	Ammonia as N	0.82	0.1		mg/L AS N
5/7/2019	R-01D	Antimony, Dissolved	0.6	0.6	U	μg/L
5/7/2019	R-01D	Aroclor 1016	0.47	0.47	U	μg/L
5/7/2019	R-01D	Aroclor 1221	0.47	0.47	U	μg/L
5/7/2019	R-01D	Aroclor 1232	0.47	0.47	U	μg/L
5/7/2019	R-01D	Aroclor 1242	0.47	0.47	U	μg/L
5/7/2019	R-01D	Aroclor 1248	0.47	0.47	U	μg/L
5/7/2019	R-01D	Aroclor 1254	0.47	0.47	U	μg/L
5/7/2019	R-01D	Aroclor 1260	0.47	0.47	U	μg/L
5/7/2019	R-01D	Arsenic, Dissolved	10	10	U	μg/L
5/7/2019	R-01D	Atrazine	3	3	U	μg/L
5/7/2019	R-01D	Barium, Dissolved	200	200	UΛ	μg/L
5/7/2019	R-01D	Benzene	1.6	1.6	U	μg/L
5/7/2019	R-01D	Benzo(a)pyrene	0.12	0.12	U	μg/L
5/7/2019	R-01D	Beryllium, Dissolved	0.4	0.4	U	μg/L
5/7/2019	R-01D	Biochemical Oxygen Demand	2	2	U	mg/L
5/7/2019	R-01D	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/7/2019	R-01D	Boron, Dissolved	324	100		μg/L
5/7/2019	R-01D	Cadmium, Dissolved	5	5	U	μg/L
5/7/2019	R-01D	Calcium and Magnesium Hardness, Dissolved	268000	500		μg/L
5/7/2019	R-01D	Calcium, Dissolved	50200	5000		μg/L
5/7/2019	R-01D	Carbofuran	2.5	2.5	U *	μg/L
5/7/2019	R-01D	Carbon tetrachloride	2	2	U	μg/L
5/7/2019	R-01D	Chloride, Dissolved	27.5	1		mg/L
5/7/2019	R-01D	Chlorobenzene	1.6	1.6	U	μg/L
5/7/2019	R-01D	Chloroethane	2.5	2.5	U	μg/L
5/7/2019	R-01D	Chromium, Dissolved	10	10	U	μg/L
5/7/2019	R-01D	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/7/2019	R-01D	cis-Chlordane	0.05	0.05	U	μg/L
5/7/2019	R-01D	Cobalt, Dissolved	10	10	U	μg/L
5/7/2019	R-01D	Copper, Dissolved	10	10	U	μg/L
5/7/2019	R-01D	Dalapon	1	1	U	μg/L
5/7/2019	R-01D	Dinoseb	1	1	U *	μg/L
5/7/2019	R-01D	Dissolved Cyanide	0.01	0.01	U	mg/L
5/7/2019	R-01D	Endothall	25	25	U *	μg/L
5/7/2019	R-01D	Endrin	0.1	0.1	U	μg/L
5/7/2019	R-01D	Ethylbenzene	1.6	1.6	U	μg/L
5/7/2019	R-01D	Fluoride, Dissolved	0.8	0.5		mg/L
5/7/2019	R-01D	gamma-BHC (Lindane)	0.05	0.05	U	μg/L
5/7/2019	R-01D	Heptachlor	0.05	0.05	U	μg/L
5/7/2019	R-01D	Heptachlor epoxide	0.05	0.05	U	μg/L
5/7/2019	R-01D	Hexachlorocyclopentadiene	0.7	0.7	U	μg/L
5/7/2019	R-01D	Iron, Dissolved	676	100		μg/L
5/7/2019	R-01D	Lead, Dissolved	7.5	7.5	U	μg/L
5/7/2019	R-01D	Magnesium, Dissolved	34700	5000		μg/L
5/7/2019	R-01D	Manganese, Dissolved	13.7	5		μg/L
5/7/2019	R-01D	Mercury, Dissolved	0.2	0.2	U	μg/L
5/7/2019	R-01D	Methoxychlor	0.5	0.5	U	μg/L
5/7/2019	R-01D	Methylene Chloride	1.3	1.3	U	μg/L
5/7/2019	R-01D	Nickel, Dissolved	10	10	U	μg/L
5/7/2019	R-01D	Nitrate, Dissolved	0.02	0.02	U	mg/L AS N
5/7/2019	R-01D	Nitrite	0.02	0.02	U	mg/L AS N
5/7/2019	R-01D	Nitrogen, Nitrate	0.02	0.02	U	mg/L AS N
5/7/2019	R-01D	Orthophosphate	0.049	0.02		mg/L AS P
5/7/2019	R-01D	Pentachlorophenol	0.34	0.34	U	μg/L
5/7/2019	R-01D	Picloram	1	1	U	μg/L
5/7/2019	R-01D	Selenium, Dissolved	5	5	U	μg/L
5/7/2019	R-01D	Silver, Dissolved	10	10	U	μg/L
5/7/2019	R-01D	Simazine	4	4	U	μg/L
5/7/2019	R-01D	Styrene	1.7	1.7	U	μg/L
5/7/2019	R-01D	Sulfate	31.9	1.5	1	mg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	R-01D	Sulfate, Dissolved	35	1.5		mg/L
5/7/2019	R-01D	Sulfide	1	1	U	mg/L
5/7/2019	R-01D	Tetrachloroethene	2.1	2.1	U	μg/L
5/7/2019	R-01D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/7/2019	R-01D	Toluene	1.6	1.6	U	μg/L
5/7/2019	R-01D	Total Dissolved Solids Field Filtered	351	5	_	mg/L
5/7/2019	R-01D	Total Kjeldahl Nitrogen	0.84	0.15	В	mg/L AS N
5/7/2019	R-01D	Total Kjeldahl Nitrogen	0.96	0.15	Н	mg/L AS N
5/7/2019	R-01D	Total Organic Carbon	1.6	1		mg/L
5/7/2019	R-01D	Total Recoverable Phenolics	0.011	0.005		mg/L
5/7/2019	R-01D	Toxaphene	5	5	U	μg/L
5/7/2019	R-01D	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/7/2019	R-01D	trans-Chlordane	0.05	0.05	U	μg/L
5/7/2019	R-01D	Trichloroethene	1.9	1.9 2.3	U	μg/L
5/7/2019	R-01D	Vinyl chloride				μg/L
5/7/2019	R-01D	Xylenes, Total	3	3	U	µg/L
5/7/2019	R-01D	Zinc, Dissolved	20	20	U	μg/L
5/7/2019	R-01D	Ethane	15	15	UHRA	μg/L
5/7/2019	R-01D	Ethene	13	13	UHRA	μg/L
5/7/2019	R-01D	Methane 1,1,1-Trichloroethane	13	8 2.1	HRA	µg/L
5/7/2019 5/7/2019	US-02D US-02D	1,1,2-Trichloroethane	2.1	1.9	U	μg/L
		1,1-Dichloroethene				μg/L
5/7/2019 5/7/2019	US-02D US-02D	1,2,4-Trichlorobenzene	2.5	2.5	U	μg/L
	US-02D		1	5	U	μg/L
5/7/2019 5/7/2019	US-02D	1,2-Dibromo-3-Chloropropane	5	2	U	μg/L
		1,2-Dibromoethane	2			µg/L
5/7/2019	US-02D US-02D	1,2-Dichlorobenzene 1,2-Dichloroethane	0.15	0.15	U	μg/L
5/7/2019	US-02D		1.7	1.7	U	μg/L
5/7/2019 5/7/2019	US-02D	1,2-Dichloropropane 1,4-Dichlorobenzene	0.1	0.1	U	μg/L
						µg/L
5/7/2019 5/7/2019	US-02D US-02D	2,4,5-TP (Silvex) 2,4-D	10	2 10	U F1 U F1	μg/L
5/7/2019	US-02D	Alachlor	10	10	U	µg/L
5/7/2019	US-02D	Aldicarb	2.5	2.5	U *	μg/L
5/7/2019	US-02D	Aldicarb Alkalinity, Total	316	10	U	μg/L mg/L
5/7/2019	US-02D	Ammonia as N	0.1	0.1	U F1	mg/L AS N
5/7/2019	US-02D	Antimony, Dissolved	0.6	0.6	U	µg/L
5/7/2019	US-02D	Ariminorly, dissolved  Aroclor 1016	0.6	0.47	U	μg/L μg/L
5/7/2019	US-02D	Aroclor 1018 Aroclor 1221	0.47	0.47	U	μg/L μg/L
5/7/2019	US-02D	Aroclor 1232	0.47	0.47	U	μg/L
5/7/2019	US-02D	Aroclor 1242	0.47	0.47	U	μg/L
5/7/2019	US-02D	Aroclor 1248	0.47	0.47	U	μg/L
5/7/2019	US-02D	Aroclor 1254	0.47	0.47	U	μg/L
5/7/2019	US-02D	Aroclor 1260	0.47	0.47	U	μg/L
5/7/2019	US-02D	Arsenic, Dissolved	10	10	U	μg/L
5/7/2019	US-02D	Atrazine	3	3	U	µg/L
5/7/2019	US-02D	Barium, Dissolved	200	200	U ^	μg/L
5/7/2019	US-02D	Benzene	1.6	1.6	U	µg/L
5/7/2019	US-02D	Benzo(a)pyrene	0.12	0.12	Ü	μg/L
5/7/2019	US-02D	Beryllium, Dissolved	0.4	0.4	Ü	µg/L
5/7/2019	US-02D	Biochemical Oxygen Demand	2	2	b	mg/L
5/7/2019	US-02D	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/7/2019	US-02D	Boron, Dissolved	307	100		µg/L
5/7/2019	US-02D	Cadmium, Dissolved	5	5	U	μg/L
5/7/2019	US-02D	Calcium and Magnesium Hardness, Dissolved	279000	500		µg/L
5/7/2019	US-02D	Calcium, Dissolved	52800	5000		µg/L
5/7/2019	US-02D	Carbofuran	2.5	2.5	U *	µg/L
5/7/2019	US-02D	Carbon tetrachloride	2	2	U	µg/L
5/7/2019	US-02D	Chloride, Dissolved	25.6	1		mg/L
5/7/2019	US-02D	Chlorobenzene	1.6	1.6	U	µg/L
5/7/2019	US-02D	Chloroethane	2.5	2.5	U	µg/L
5/7/2019	US-02D	Chromium, Dissolved	10	10	Ü	µg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	US-02D	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/7/2019	US-02D	cis-Chlordane	0.05	0.05	U	μg/L
5/7/2019	US-02D	Cobalt, Dissolved	10	10	U	μg/L
5/7/2019	US-02D	Copper, Dissolved	10	10	U	μg/L
5/7/2019	US-02D	Dalapon	1	1	U	μg/L
5/7/2019	US-02D	Dinoseb	1	1	U F1 *	μg/L
5/7/2019	US-02D	Dissolved Cyanide	0.01	0.01	U F1	mg/L
5/7/2019	US-02D	<u>Endothall</u>	25	25	U F1	μg/L
5/7/2019	US-02D	Endrin	0.1	0.1	U	µg/L
5/7/2019 5/7/2019	US-02D US-02D	Ethylbenzene Fluoride, Dissolved	1.6 0.68	1.6 0.5	U	µg/L
5/7/2019	US-02D	gamma-BHC (Lindane)	0.05	0.05	U	mg/L µg/L
5/7/2019	US-02D	Heptachlor	0.05	0.05	U	μg/L μg/L
5/7/2019	US-02D	Heptachlor epoxide	0.05	0.05	U	μg/L μg/L
5/7/2019	US-02D	Hexachlorocyclopentadiene	0.7	0.03	U	μg/L μg/L
5/7/2019	US-02D	Iron, Dissolved	763	100	0	μg/L
5/7/2019	US-02D	Lead, Dissolved	7.5	7.5	U	μg/L
5/7/2019	US-02D	Magnesium, Dissolved	35700	5000	-	μg/L
5/7/2019	US-02D	Manganese, Dissolved	26	5		μg/L
5/7/2019	US-02D	Mercury, Dissolved	0.2	0.2	U	μg/L
5/7/2019	US-02D	Methoxychlor	0.5	0.5	U	µg/L
5/7/2019	US-02D	Methylene Chloride	1.3	1.3	Ü	µg/L
5/7/2019	US-02D	Nickel, Dissolved	10	10	Ü	µg/L
5/7/2019	US-02D	Nitrate, Dissolved	0.02	0.02	Ü	mg/L AS N
5/7/2019	US-02D	Nitrite	0.02	0.02	Ü	mg/L AS N
5/7/2019	US-02D	Nitrogen, Nitrate	0.033	0.02		mg/L AS N
5/7/2019	US-02D	Orthophosphate	0.17	0.02		mg/L AS P
5/7/2019	US-02D	Pentachlorophenol	0.34	0.34	U	µg/L
5/7/2019	US-02D	Picloram	1	1	U F1	μg/L
5/7/2019	US-02D	Selenium, Dissolved	5	5	U	μg/L
5/7/2019	US-02D	Silver, Dissolved	10	10	U	μg/L
5/7/2019	US-02D	Simazine	4	4	U	μg/L
5/7/2019	US-02D	Styrene	1.7	1.7	U	μg/L
5/7/2019	US-02D	Sulfate	37	1.5		mg/L
5/7/2019	US-02D	Sulfate, Dissolved	37.5	1.5		mg/L
5/7/2019	US-02D	Sulfide	1	1	U	mg/L
5/7/2019	US-02D	Tetrachloroethene	2.1	2.1	U	μg/L
5/7/2019	US-02D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/7/2019	US-02D	Toluene	1.6	1.6	U	μg/L
5/7/2019	US-02D	Total Dissolved Solids Field Filtered	362	5		mg/L
5/7/2019	US-02D	Total Kjeldahl Nitrogen	0.18	0.15	B F1 F2	
5/7/2019	US-02D	Total Kjeldahl Nitrogen	1.6	0.15	Н	mg/L AS N
5/7/2019	US-02D	Total Organic Carbon	1.7	1		mg/L
5/7/2019	US-02D	Total Recoverable Phenolics	0.0077	0.005		mg/L
5/7/2019	US-02D	Toxaphene	5	5	U	µg/L
5/7/2019	US-02D	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/7/2019	US-02D	trans-Chlordane	0.05	0.05	U	µg/L
5/7/2019	US-02D	Trichloroethene	1.9	1.9	U	µg/L
5/7/2019 5/7/2019	US-02D	Vinyl chloride	2.3	2.3	U	µg/L
5/7/2019	US-02D US-02D	Xylenes, Total	3 20	3 20	U	μg/L
		Zinc, Dissolved	15		_	μg/L
5/7/2019 5/7/2019	US-02D US-02D	Ethane Ethene	13	15 13	UHRA	µg/L µg/L
5/7/2019	US-02D	Methane	9.9	8	HRA	μg/L μg/L
5/7/2019	US-03D	1,1,1-Trichloroethane	4.1	4.1	U	μg/L μg/L
5/7/2019	US-03D	1,1,2-Trichloroethane	1.9	1.9	U	
5/7/2019	US-03D	1,1-Dichloroethene	2.5	2.5	U	µg/L µg/L
5/7/2019	US-03D	1,2,4-Trichlorobenzene	2.1	2.1	U	μg/L μg/L
5/7/2019	US-03D	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L μg/L
5/7/2019	US-03D	1,2-Dibromoethane	3.7	3.7	U	μg/L μg/L
01,12017			0.15			
5/7/2019	US-03D	1,2-Dichlorobenzene	U La	0.15	U	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	US-03D	1,2-Dichloropropane	3.6	3.6	U	μg/L
5/7/2019	US-03D	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/7/2019	US-03D	2,4,5-TP (Silvex)	2	2	U	µg/L
5/7/2019	US-03D	2,4-D	10	10	U	μg/L
5/7/2019	US-03D	Alachlor	1	1	U	μg/L
5/7/2019	US-03D	Aldicarb	2.5	2.5	U *	μg/L
5/7/2019	US-03D	Alkalinity, Total	386	10		mg/L
5/7/2019	US-03D	Ammonia as N	0.38	0.1		mg/L AS N
5/7/2019	US-03D	Antimony, Dissolved	0.68	0.6		μg/L
5/7/2019	US-03D	Aroclor 1016	0.47	0.47	U	μg/L
5/7/2019	US-03D	Aroclor 1221	0.47	0.47	U	µg/L
5/7/2019	US-03D	Aroclor 1232	0.47	0.47	U	μg/L
5/7/2019	US-03D	Aroclor 1242	0.47	0.47	U	μg/L
5/7/2019	US-03D	Aroclor 1248	0.47	0.47	U	µg/L
5/7/2019	US-03D	Aroclor 1254	0.47	0.47	U	μg/L
5/7/2019	US-03D	Aroclor 1260	0.47	0.47	U	μg/L
5/7/2019	US-03D	Arsenic, Dissolved	10	10	U	μg/L
5/7/2019	US-03D	Atrazine	3	3	Ü	μg/L
5/7/2019	US-03D	Barium, Dissolved	200	200	UΛ	µg/L
5/7/2019	US-03D	Benzene	2.1	2.1	U	µg/L
5/7/2019	US-03D	Benzo(a)pyrene	0.12	0.12	Ü	µg/L
5/7/2019	US-03D	Beryllium, Dissolved	0.4	0.4	U	μg/L
5/7/2019	US-03D	Biochemical Oxygen Demand	2	2	U	mg/L
5/7/2019	US-03D	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/7/2019	US-03D	Boron, Dissolved	101	100	- 0	µg/L
5/7/2019	US-03D	Cadmium, Dissolved	5	5	U	μg/L
5/7/2019	US-03D	Calcium and Magnesium Hardness, Dissolved	493000	500	- 0	μg/L
5/7/2019	US-03D	Calcium, Dissolved	108000	5000		μg/L μg/L
5/7/2019	US-03D	Carbofuran	2.5	2.5	U*	μg/L
5/7/2019	US-03D	Carbon tetrachloride	2.3	2.3	U	μg/L μg/L
5/7/2019	US-03D	Chloride, Dissolved	260	3.4	U	mg/L
5/7/2019	US-03D	Chlorobenzene	3.8	3.8	U	μg/L
5/7/2019	US-03D	Chloroethane	2.5	2.5	U	
5/7/2019	US-03D	Chromium, Dissolved	10	10	U	μg/L μg/L
5/7/2019	US-03D	cis-1,2-Dichloroethene	290	4.1	U	μg/L μg/L
5/7/2019	US-03D	cis-Chlordane	0.05	0.05	U	
	US-03D	Cobalt, Dissolved	10	10	U	μg/L
5/7/2019 5/7/2019	US-03D	·	10	10	U	μg/L
		Copper, Dissolved  Dalapon	10	10	U	μg/L
5/7/2019	US-03D		1	1		μg/L
5/7/2019	US-03D	Dinoseb	0.01	0.01	U *	μg/L
5/7/2019	US-03D	Dissolved Cyanide	0.01	0.01		mg/L
5/7/2019	US-03D	Endothall	25	25	U	µg/L
5/7/2019	US-03D	Endrin	0.1	0.1	U	μg/L
5/7/2019	US-03D	Ethylbenzene	3.7	3.7	U	µg/L
5/7/2019	US-03D	Fluoride, Dissolved	0.53	0.5		mg/L
5/7/2019	US-03D	gamma-BHC (Lindane)	0.05	0.05	U	µg/L
5/7/2019	US-03D	Heptachlor	0.05	0.05	U	µg/L
5/7/2019	US-03D	Heptachlor epoxide	0.05	0.05	U	µg/L
5/7/2019	US-03D	Hexachlorocyclopentadiene	0.7	0.7	U	µg/L
5/7/2019	US-03D	Iron, Dissolved	2880	100		µg/L
5/7/2019	US-03D	Lead, Dissolved	7.5	7.5	U	µg/L
5/7/2019	US-03D	Magnesium, Dissolved	54300	5000	<u> </u>	µg/L
5/7/2019	US-03D	Manganese, Dissolved	38.8	5		μg/L
5/7/2019	US-03D	Mercury, Dissolved	0.2	0.2	U	µg/L
5/7/2019	US-03D	Methoxychlor	0.5	0.5	U	μg/L
5/7/2019	US-03D	Methylene Chloride	2.2	2.2	U	μg/L
5/7/2019	US-03D	Nickel, Dissolved	10	10	U	μg/L
5/7/2019	US-03D	Nitrate, Dissolved	0.02	0.02	U	mg/L AS N
5/7/2019	US-03D	Nitrite	0.02	0.02	U	mg/L AS N
5/7/2019	US-03D	Nitrogen, Nitrate	0.02	0.02	U	mg/L AS N
5/7/2019	US-03D	Orthophosphate	0.031	0.02		mg/L AS P
5/7/2019	US-03D	Pentachlorophenol	0.34	0.34	U	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	US-03D	Picloram	1	1	U	μg/L
5/7/2019	US-03D	Selenium, Dissolved	5	5	U	μg/L
5/7/2019	US-03D	Silver, Dissolved	10	10	U	μg/L
5/7/2019	US-03D	Simazine	4	4	U	μg/L
5/7/2019	US-03D	Styrene	3.7	3.7	U	μg/L
5/7/2019	US-03D	Sulfate	61.6	3		mg/L
5/7/2019	US-03D	Sulfate, Dissolved	53.2	3		mg/L
5/7/2019	US-03D	Sulfide	1	1	U	mg/L
5/7/2019	US-03D	Tetrachloroethene	2.1	2.1	U	μg/L
5/7/2019	US-03D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/7/2019	US-03D	Toluene	2.6	2.6	U	μg/L
5/7/2019	US-03D	Total Dissolved Solids Field Filtered	807	5		mg/L
5/7/2019	US-03D	Total Kjeldahl Nitrogen	0.74	0.15	Н	mg/L AS N
5/7/2019	US-03D	Total Kjeldahl Nitrogen	0.55	0.15	В	mg/L AS N
5/7/2019	US-03D	Total Organic Carbon	1.4	0.005		mg/L
5/7/2019	US-03D	Total Recoverable Phenolics	0.0067	0.005	- 11	mg/L
5/7/2019	US-03D	Toxaphene	5 39	5	U	μg/L
5/7/2019	US-03D	trans-1,2-Dichloroethene		4.5		μg/L
5/7/2019	US-03D	trans-Chlordane	0.05	0.05	U	μg/L
5/7/2019	US-03D	Trichloroethene	2.3	2.3	U	μg/L
5/7/2019	US-03D	Vinyl chloride	66	4.5 3.3	- 11	μg/L
5/7/2019	US-03D	Xylenes, Total	3.3		U	μg/L
5/7/2019	US-03D	Zinc, Dissolved	20	20	U	μg/L
5/7/2019	US-03D	Ethane	15	15	UHRA	μg/L
5/7/2019	US-03D	Ethene	13	13	UHRA	μg/L
5/7/2019	US-03D	Methane	87	8	H RA	μg/L
5/7/2019	US-04S	1,1,1-Trichloroethane	2.1	2.1 1.9	U	μg/L
5/7/2019	US-04S	1,1,2-Trichloroethane	1.9 2.5		U	μg/L
5/7/2019 5/7/2019	US-04S US-04S	1,1-Dichloroethene 1,2,4-Trichlorobenzene		2.5 1	U	μg/L
		1,2-Dibromo-3-Chloropropane	1	•		µg/L
5/7/2019 5/7/2019	US-04S US-04S	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane	5 2	5 2	U	μg/L
5/7/2019	US-04S	1,2-Discondendate	0.15	0.15	U	µg/L
5/7/2019	US-04S	1,2-Dichloroethane	0.15	0.15	U	μg/L
5/7/2019	US-04S	1,2-Dichloropropane	1.7	1.7	U	μg/L μg/L
5/7/2019	US-04S	1,4-Dichlorobenzene	0.1	0.1	U	μg/L μg/L
5/7/2019	US-04S	2,4,5-TP (Silvex)	2	2	U	μg/L
5/7/2019	US-04S	2,4,D	10	10	U	μg/L
5/7/2019	US-04S	Alachlor	10	10	U	μg/L
5/7/2019	US-04S	Aldicarb	2.5	2.5	U*	μg/L
5/7/2019	US-04S	Antimony, Dissolved	0.6	0.6	U	μg/L
5/7/2019	US-04S	Aroclor 1016	0.47	0.47	U	μg/L
5/7/2019	US-04S	Aroclor 1221	0.47	0.47	U	μg/L
5/7/2019	US-04S	Aroclor 1232	0.47	0.47	U	µg/L
5/7/2019	US-04S	Aroclor 1242	0.47	0.47	U	μg/L
5/7/2019	US-04S	Aroclor 1248	0.47	0.47	U	µg/L
5/7/2019	US-04S	Aroclor 1254	0.47	0.47	Ü	µg/L
5/7/2019	US-04S	Aroclor 1260	0.47	0.47	U	µg/L
5/7/2019	US-04S	Arsenic, Dissolved	10	10	U	µg/L
5/7/2019	US-04S	Atrazine	3	3	U	μg/L
5/7/2019	US-04S	Barium, Dissolved	243	20		µg/L
5/7/2019	US-04S	Benzene	1.6	1.6	U	µg/L
5/7/2019	US-04S	Benzo(a)pyrene	0.12	0.12	U	μg/L
5/7/2019	US-04S	Beryllium, Dissolved	0.4	0.4	U	µg/L
5/7/2019	US-04S	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	µg/L
5/7/2019	US-04S	Boron, Dissolved	143	100		µg/L
5/7/2019	US-04S	Cadmium, Dissolved	5	5	U	μg/L
5/7/2019	US-04S	Calcium and Magnesium Hardness, Dissolved	617000	500		μg/L
5/7/2019	US-04S	Calcium, Dissolved	146000	5000		μg/L
5/7/2019	US-04S	Carbofuran	2.5	2.5	U	µg/L
5/7/2019	US-04S	Carbon tetrachloride	2	2	U	µg/L
5/7/2019	US-04S	Chloride, Dissolved	236	3.4		mg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	US-04S	Chlorobenzene	1.6	1.6	U	μg/L
5/7/2019	US-04S	Chloroethane	2.5	2.5	U	μg/L
5/7/2019	US-04S	Chromium, Dissolved	10	10	U	μg/L
5/7/2019	US-04S	cis-1,2-Dichloroethene	19	1.8		μg/L
5/7/2019	US-04S	cis-Chlordane	0.05	0.05	U	μg/L
5/7/2019	US-04S	Cobalt, Dissolved	10	10	U	μg/L
5/7/2019	US-04S	Copper, Dissolved	10	10	U	μg/L
5/7/2019	US-04S	Dalapon	1	1	U	μg/L
5/7/2019	US-04S	Dinoseb		1	U	μg/L
5/7/2019	US-04S	Dissolved Cyanide	0.01	0.01	U. *	mg/L
5/7/2019	US-04S	<u>Endothall</u>	25	25	U*	μg/L
5/7/2019	US-04S	Endrin	0.1	0.1	U	μg/L
5/7/2019	US-04S	Ethylbenzene	1.6	1.6	U	μg/L
5/7/2019	US-04S	Fluoride, Dissolved	0.5	0.5	U	mg/L
5/7/2019	US-04S	gamma-BHC (Lindane)	0.047	0.047	U	μg/L
5/7/2019	US-04S	Heptachlor	0.047	0.047	U	μg/L
5/7/2019	US-04S	Heptachlor epoxide	0.047	0.047	U	μg/L
5/7/2019	US-04S	Hexachlorocyclopentadiene	0.7	0.7	U	μg/L
5/7/2019	US-04S	Iron, Dissolved Lead, Dissolved	3920 7.5	100	11	μg/L
5/7/2019	US-04S			7.5	U	μg/L
5/7/2019 5/7/2019	US-04S US-04S	Magnesium, Dissolved  Manganese, Dissolved	61500 105	5000 5		μg/L
				_	11	μg/L
5/7/2019	US-04S	Mercury, Dissolved	0.2	0.2	U	μg/L
5/7/2019	US-04S US-04S	Methoxychlor	0.5	0.5 1.3	U	μg/L
5/7/2019	US-04S US-04S	Methylene Chloride		1.3	U	μg/L
5/7/2019		Nickel, Dissolved	16.3	_	11	μg/L
5/7/2019	US-04S	Nitrate, Dissolved	0.02	0.02	U	mg/L
5/7/2019	US-04S	Pentachlorophenol	0.34	0.34	U	μg/L
5/7/2019 5/7/2019	US-04S US-04S	Picloram Selenium, Dissolved	5	5	U	μg/L
			10			μg/L
5/7/2019 5/7/2019	US-04S US-04S	Silver, Dissolved Simazine	4	10	U	μg/L
5/7/2019	US-04S	Styrene	1.7	1.7	U	μg/L
5/7/2019	US-04S	Sulfate, Dissolved	1.7	7.5	U	μg/L mg/L
5/7/2019	US-04S	Tetrachloroethene	2.1	2.1	U	µg/L
5/7/2019	US-04S	Thallium, Dissolved	0.2	0.2	U	μg/L μg/L
5/7/2019	US-04S	Toluene	1.6	1.6	U	μg/L μg/L
5/7/2019	US-04S	Total Dissolved Solids Field Filtered	927	5	0	mg/L
5/7/2019	US-04S	Total Recoverable Phenolics	0.005	0.005	U	mg/L
5/7/2019	US-04S	Toxaphene	5	5	U	μg/L
5/7/2019	US-04S	trans-1,2-Dichloroethene	2.3	1.9	0	μg/L
5/7/2019	US-04S	trans-Chlordane	0.05	0.05	U	μg/L
5/7/2019	US-04S	Trichloroethene	1.9	1.9	Ü	μg/L
5/7/2019	US-04S	Vinyl chloride	2.3	2.3	U	μg/L
5/7/2019	US-04S	Xylenes, Total	3	3	Ü	μg/L
5/7/2019	US-04S	Zinc, Dissolved	20	20	U	µg/L
5/7/2019	US-06D	1,1,1-Trichloroethane	2.1	2.1	U	μg/L
5/7/2019	US-06D	1,1,2-Trichloroethane	1.9	1.9	U	µg/L
5/7/2019	US-06D	1,1-Dichloroethene	2.5	2.5	U	μg/L
5/7/2019	US-06D	1,2,4-Trichlorobenzene	1	1	U	μg/L
5/7/2019	US-06D	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L
5/7/2019	US-06D	1,2-Dibromoethane	2	2	U	μg/L
5/7/2019	US-06D	1,2-Dichlorobenzene	0.15	0.15	U	μg/L
5/7/2019	US-06D	1,2-Dichloroethane	1	1	U	μg/L
5/7/2019	US-06D	1,2-Dichloropropane	1.7	1.7	U	μg/L
5/7/2019	US-06D	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/7/2019	US-06D	2,4,5-TP (Silvex)	2	2	U	μg/L
5/7/2019	US-06D	2,4-D	10	10	U	μg/L
5/7/2019	US-06D	Alachlor	1	1	U	μg/L
5/7/2019	US-06D	Aldicarb	2.5	2.5	U *	μg/L
5/7/2019	US-06D	Alkalinity, Total	180	10		mg/L
5/7/2019	US-06D	Ammonia as N	0.75	0.1		mg/L AS N

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	US-06D	Antimony, Dissolved	0.6	0.6	U	μg/L
5/7/2019	US-06D	Aroclor 1016	0.47	0.47	U	μg/L
5/7/2019	US-06D	Aroclor 1221	0.47	0.47	U	μg/L
5/7/2019	US-06D	Aroclor 1232	0.47	0.47	U	μg/L
5/7/2019	US-06D	Aroclor 1242	0.47	0.47	U	μg/L
5/7/2019	US-06D	Aroclor 1248	0.47	0.47	U	μg/L
5/7/2019	US-06D	Aroclor 1254	0.47	0.47	U	μg/L
5/7/2019	US-06D	Aroclor 1260	0.47	0.47	U	μg/L
5/7/2019	US-06D	Arsenic, Dissolved	10	10	U	μg/L
5/7/2019	US-06D	Atrazine	3	3	U	μg/L
5/7/2019	US-06D	Barium, Dissolved	200	200	U ^	μg/L
5/7/2019	US-06D	Benzene	1.6	1.6	U	μg/L
5/7/2019	US-06D	Benzo(a)pyrene	0.12	0.12	U	μg/L
5/7/2019	US-06D	Beryllium, Dissolved	0.4	0.4		µg/L
5/7/2019	US-06D	Biochemical Oxygen Demand	2	2	U	mg/L
5/7/2019	US-06D	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/7/2019	US-06D	Boron, Dissolved	535	100		μg/L
5/7/2019	US-06D	Cadmium, Dissolved	5	5	U	μg/L
5/7/2019	US-06D	Calcium and Magnesium Hardness, Dissolved	146000	500		μg/L
5/7/2019	US-06D	Calcium, Dissolved	28700	5000	11.4	μg/L
5/7/2019	US-06D	Carbofuran	2.5	2.5	U*	μg/L
5/7/2019	US-06D	Carbon tetrachloride	2	2	U	μg/L
5/7/2019	US-06D	Chloride, Dissolved	5.8	1		mg/L
5/7/2019	US-06D	Chlorobenzene	1.6	1.6	U	μg/L
5/7/2019	US-06D	Chloroethane	2.5	2.5	U	μg/L
5/7/2019	US-06D	Chromium, Dissolved	10	10	U	μg/L
5/7/2019	US-06D	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/7/2019	US-06D	cis-Chlordane	0.05	0.05	U	μg/L
5/7/2019	US-06D	Cobalt, Dissolved	10	10	U	μg/L
5/7/2019	US-06D	Copper, Dissolved	10	10	U	μg/L
5/7/2019	US-06D	Dalapon	1	1	U	μg/L
5/7/2019	US-06D	Dinoseb	0.01	1	U *	μg/L
5/7/2019	US-06D	Dissolved Cyanide	0.01	0.01	U	mg/L
5/7/2019	US-06D	Endothall	25	25	U	μg/L
5/7/2019	US-06D	Endrin	0.1	0.1	U	μg/L
5/7/2019	US-06D	Ethylbenzene	1.6	1.6	U	μg/L
5/7/2019 5/7/2019	US-06D US-06D	Fluoride, Dissolved	1.3	0.5 0.05	U	mg/L
5/7/2019		gamma-BHC (Lindane)  Heptachlor	0.05		U	µg/L
5/7/2019	US-06D		0.05	0.05		µg/L
5/7/2019	US-06D US-06D	Heptachlor epoxide	0.05 0.7	0.05 0.7	U	µg/L
5/7/2019		Hexachlorocyclopentadiene	309	100	U	µg/L
5/7/2019	US-06D US-06D	Iron, Dissolved Lead, Dissolved	7.5	7.5	U	µg/L
5/7/2019	US-06D	Magnesium, Dissolved	18000	5000	U	μg/L μg/L
5/7/2019	US-06D	Manganese, Dissolved	15.3	5		μg/L μg/L
5/7/2019	US-06D	Mercury, Dissolved	0.2	0.2	U	μg/L μg/L
5/7/2019	US-06D	Methoxychlor	0.2	0.2	U	μg/L μg/L
5/7/2019	US-06D	Metholychiol  Methylene Chloride	1.3	1.3	U	μg/L μg/L
5/7/2019	US-06D	Nickel, Dissolved	1.0	10	U	μg/L
5/7/2019	US-06D	Nitrate, Dissolved	0.02	0.02	U	mg/L AS N
5/7/2019	US-06D	Nitrite	0.02	0.02	U	mg/L AS N
5/7/2019	US-06D	Nitrogen, Nitrate	0.02	0.02	U	mg/L/S/N
5/7/2019	US-06D	Orthophosphate	0.18	0.02		mg/L AS P
5/7/2019	US-06D	Pentachlorophenol	0.34	0.34	U	µg/L
5/7/2019	US-06D	Picloram	1	1	U	µg/L
5/7/2019	US-06D	Selenium, Dissolved	5	5	U	µg/L
5/7/2019	US-06D	Silver, Dissolved	10	10	U	μg/L
5/7/2019	US-06D	Simazine	4	4	U	µg/L
5/7/2019	US-06D	Styrene	1.7	1.7	U	µg/L
5/7/2019	US-06D	Sulfate	107	4.5		mg/L
5/7/2019	US-06D	Sulfate, Dissolved	91.5	7.5		mg/L
5/7/2019	US-06D	Sulfide	1	1	U	mg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	US-06D	Tetrachloroethene	2.1	2.1	U	μg/L
5/7/2019	US-06D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/7/2019	US-06D	Toluene	1.6	1.6	U	μg/L
5/7/2019	US-06D	Total Dissolved Solids Field Filtered	304	5		mg/L
5/7/2019	US-06D	Total Kjeldahl Nitrogen	0.94	0.15	H	mg/L AS N
5/7/2019 5/7/2019	US-06D US-06D	Total Kjeldahl Nitrogen	1.1	0.15	В	mg/L AS N
5/7/2019	US-06D	Total Organic Carbon Total Recoverable Phenolics	0.0082	0.005	F1	mg/L mg/L
5/7/2019	US-06D	Total Recoverable Prieriolics Toxaphene	5	5	U	μg/L
5/7/2019	US-06D	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L μg/L
5/7/2019	US-06D	trans-Chlordane	0.05	0.05	U	μg/L μg/L
5/7/2019	US-06D	Trichloroethene	1.9	1.9	U	μg/L
5/7/2019	US-06D	Vinyl chloride	2.3	2.3	Ü	μg/L
5/7/2019	US-06D	Xylenes, Total	3	3	U	µg/L
5/7/2019	US-06D	Zinc, Dissolved	20	20	Ü	µg/L
5/7/2019	US-06D	Ethane	15	15	UHRA	µg/L
5/7/2019	US-06D	Ethene	13	13	UHRA	μg/L
5/7/2019	US-06D	Methane	8	8	UHRA	μg/L
5/7/2019	US-06S	1,1,1-Trichloroethane	2.1	2.1	U	μg/L
5/7/2019	US-06S	1,1,2-Trichloroethane	1.9	1.9	U	µg/L
5/7/2019	US-06S	1,1-Dichloroethene	2.5	2.5	U	μg/L
5/7/2019	US-06S	1,2,4-Trichlorobenzene	1	1	U	μg/L
5/7/2019	US-06S	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L
5/7/2019	US-06S	1,2-Dibromoethane	2	2	U	μg/L
5/7/2019	US-06S	1,2-Dichlorobenzene	0.15	0.15	U	μg/L
5/7/2019	US-06S	1,2-Dichloroethane	1	1	U	μg/L
5/7/2019	US-06S	1,2-Dichloropropane	1.7	1.7	U	μg/L
5/7/2019	US-06S	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/7/2019	US-06S	2,4,5-TP (Silvex)	2	2	U	μg/L
5/7/2019	US-06S	2,4-D	10	10	U	μg/L
5/7/2019	US-06S	Alachlor	1	1	U	μg/L
5/7/2019	US-06S	Aldicarb	2.5	2.5	U *	μg/L
5/7/2019	US-06S	Antimony, Dissolved	0.6	0.6	U	μg/L
5/7/2019	US-06S	Aroclor 1016	0.47	0.47	U	μg/L
5/7/2019 5/7/2019	US-06S US-06S	Aroclor 1221	0.47 0.47	0.47 0.47	U	μg/L
5/7/2019	US-06S	Aroclor 1232 Aroclor 1242	0.47	0.47	U	μg/L
5/7/2019	US-06S	Aroclor 1242 Aroclor 1248	0.47	0.47	U	μg/L
5/7/2019	US-06S	Aroclor 1246 Aroclor 1254	0.47	0.47	U	μg/L μg/L
5/7/2019	US-06S	Aroclor 1254 Aroclor 1260	0.47	0.47	U	μg/L μg/L
5/7/2019	US-06S	Arsenic, Dissolved	10	10	U	μg/L μg/L
5/7/2019	US-06S	Atrazine	3	3	U	μg/L
5/7/2019	US-06S	Barium, Dissolved	128	20		μg/L
5/7/2019	US-06S	Benzene	1.6	1.6	U	µg/L
5/7/2019	US-06S	Benzo(a)pyrene	0.12	0.12	Ü	μg/L
5/7/2019	US-06S	Beryllium, Dissolved	0.4	0.4	Ü	µg/L
5/7/2019	US-06S	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	µg/L
5/7/2019	US-06S	Boron, Dissolved	100	100	U	µg/L
5/7/2019	US-06S	Cadmium, Dissolved	5	5	U	µg/L
5/7/2019	US-06S	Calcium and Magnesium Hardness, Dissolved	472000	500		μg/L
5/7/2019	US-06S	Calcium, Dissolved	108000	5000		μg/L
5/7/2019	US-06S	Carbofuran	2.5	2.5	U	μg/L
5/7/2019	US-06S	Carbon tetrachloride	2	2	U	μg/L
5/7/2019	US-06S	Chloride, Dissolved	134	1.7		mg/L
5/7/2019	US-06S	Chlorobenzene	1.6	1.6	U	μg/L
5/7/2019	US-06S	Chloroethane	2.5	2.5	U	μg/L
5/7/2019	US-06S	Chromium, Dissolved	10	10	U	μg/L
5/7/2019	US-06S	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/7/2019	US-06S	cis-Chlordane	0.05	0.05	U	μg/L
5/7/2019	US-06S	Cobalt, Dissolved	10	10	U	μg/L
5/7/2019	US-06S	Copper, Dissolved	10	10	U	μg/L
5/7/2019	US-06S	Dalapon	1	1	U	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	US-06S	Dinoseb	1	1	U	μg/L
5/7/2019	US-06S	Dissolved Cyanide	0.01	0.01	U	mg/L
5/7/2019	US-06S	Endothall	25	25	U *	μg/L
5/7/2019	US-06S US-06S	Endrin	0.1	0.1	U	μg/L
5/7/2019 5/7/2019	US-06S	Ethylbenzene	1.6 0.5	1.6 0.5	U	µg/L
5/7/2019	US-06S	Fluoride, Dissolved gamma-BHC (Lindane)	0.047	0.3	U	mg/L μg/L
5/7/2019	US-06S	Heptachlor	0.047	0.047	U	μg/L μg/L
5/7/2019	US-06S	Heptachlor epoxide	0.047	0.047	U	μg/L
5/7/2019	US-06S	Hexachlorocyclopentadiene	0.7	0.7	U	µg/L
5/7/2019	US-06S	Iron, Dissolved	4330	100	Ť	μg/L
5/7/2019	US-06S	Lead, Dissolved	7.5	7.5	U	µg/L
5/7/2019	US-06S	Magnesium, Dissolved	48800	5000		μg/L
5/7/2019	US-06S	Manganese, Dissolved	92.9	5		μg/L
5/7/2019	US-06S	Mercury, Dissolved	0.2	0.2	U	μg/L
5/7/2019	US-06S	Methoxychlor	0.5	0.5	U	μg/L
5/7/2019	US-06S	Methylene Chloride	1.3	1.3	U	μg/L
5/7/2019	US-06S	Nickel, Dissolved	10	10	U	μg/L
5/7/2019	US-06S	Nitrate, Dissolved	0.02	0.02	U	mg/L
5/7/2019	US-06S	Pentachlorophenol	0.34	0.34	U	μg/L
5/7/2019	US-06S	Picloram	1 1	1	U	μg/L
5/7/2019	US-06S	Selenium, Dissolved	5	5	U	μg/L
5/7/2019 5/7/2019	US-06S US-06S	Silver, Dissolved	10	10	U	μg/L
5/7/2019	US-06S	Simazine Styrene	1.7	1.7	U	μg/L
5/7/2019	US-06S	Sulfate, Dissolved	1.7	1.5	U F1	μg/L mg/L
5/7/2019	US-06S	Tetrachloroethene	2.1	2.1	U	μg/L
5/7/2019	US-06S	Thallium, Dissolved	0.2	0.2	U	μg/L μg/L
5/7/2019	US-06S	Toluene	1.6	1.6	U	μg/L
5/7/2019	US-06S	Total Dissolved Solids Field Filtered	549	5		mg/L
5/7/2019	US-06S	Total Recoverable Phenolics	0.005	0.005	U	mg/L
5/7/2019	US-06S	Toxaphene	5	5	U	μg/L
5/7/2019	US-06S	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/7/2019	US-06S	trans-Chlordane	0.05	0.05	U	μg/L
5/7/2019	US-06S	Trichloroethene	1.9	1.9	U	μg/L
5/7/2019	US-06S	Vinyl chloride	2.3	2.3	U	μg/L
5/7/2019	US-06S	Xylenes, Total	3	3	U	μg/L
5/7/2019	US-06S	Zinc, Dissolved	20	20	U	μg/L
5/7/2019	W-06S	1,1,1-Trichloroethane	3.3	3.3	U	μg/L
5/7/2019	W-06S	1,1,2-Trichloroethane	1.9 2.5	1.9 2.5	U	μg/L
5/7/2019 5/7/2019	W-06S W-06S	1,1-Dichloroethene	1.6	1.6	U	µg/L
5/7/2019	W-06S	1,2,4-Trichlorobenzene 1,2-Dibromo-3-Chloropropane	5	5	U	μg/L μg/L
5/7/2019	W-06S	1,2-Dibromoethane	2.9	2.9	U	μg/L μg/L
5/7/2019	W-06S	1,2-Dishornoemane	0.15	0.15	U	μg/L
5/7/2019	W-06S	1,2-Dichloroethane	1	1	U	µg/L
5/7/2019	W-06S	1,2-Dichloropropane	2.9	2.9	Ü	μg/L
5/7/2019	W-06S	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/7/2019	W-06S	2,4,5-TP (Silvex)	2	2	U	μg/L
5/7/2019	W-06S	2,4-D	10	10	U	μg/L
5/7/2019	W-06S	Alachlor	1	1	U	μg/L
5/7/2019	W-06S	Aldicarb	2.5	2.5	U*	μg/L
5/7/2019	W-06S	Antimony, Dissolved	0.6	0.6	U	μg/L
5/7/2019	W-06S	Aroclor 1016	0.47	0.47	U	μg/L
5/7/2019	W-06S	Aroclor 1221	0.47	0.47	U	μg/L
5/7/2019	W-06S	Aroclor 1232	0.47	0.47	U	μg/L
5/7/2019	W-06S W-06S	Arcelor 1242	0.47	0.47	U	μg/L
	VV-U6.5	Aroclor 1248	0.47	0.47		µg/L
5/7/2019		Aradar 10E 4				
5/7/2019 5/7/2019	W-06S	Aroclor 1254	0.47	0.47	U	µg/L
5/7/2019		Aroclor 1254 Aroclor 1260 Arsenic, Dissolved	0.47 0.47 10	0.47	U	μg/L μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/7/2019	W-06S	Barium, Dissolved	92.6	20		μg/L
5/7/2019	W-06S	Benzene	1.6	1.6	U	μg/L
5/7/2019	W-06S	Benzo(a)pyrene	0.13	0.13	U	μg/L
5/7/2019	W-06S	Beryllium, Dissolved	0.4	0.4	U	μg/L
5/7/2019	W-06S	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/7/2019	W-06S	Boron, Dissolved	276	100		μg/L
5/7/2019	W-06S	Cadmium, Dissolved	5	5	U	μg/L
5/7/2019	W-06S	Calcium and Magnesium Hardness, Dissolved	1550000	500		μg/L
5/7/2019	W-06S	Calcium, Dissolved	369000	5000	L	μg/L
5/7/2019	W-06S	Carbofuran	2.5	2.5	U	μg/L
5/7/2019	W-06S	Carbon tetrachloride	2	2	U	μg/L
5/7/2019	W-06S	Chloride, Dissolved	290	3.4		mg/L
5/7/2019	W-06S	Chlorobenzene	3	3	U	μg/L
5/7/2019	W-06S	Chloroethane	2.5	2.5	U	μg/L
5/7/2019	W-06S	Chromium, Dissolved	10	10	U	μg/L
5/7/2019	W-06S	cis-1,2-Dichloroethene	6.6	3.2	L	μg/L
5/7/2019	W-06S	cis-Chlordane	0.05	0.05	U	μg/L
5/7/2019	W-06S	Cobalt, Dissolved	10	10	U	μg/L
5/7/2019	W-06S	Copper, Dissolved	10	10	U	μg/L
5/7/2019	W-06S	Dalapon	1	1	U	μg/L
5/7/2019	W-06S	Dinoseb	1	1	U	μg/L
5/7/2019	W-06S	Dissolved Cyanide	0.01	0.01	U	mg/L
5/7/2019	W-06S	Endothall	25	25	U*	μg/L
5/7/2019	W-06S	Endrin	0.1	0.1	U	μg/L
5/7/2019	W-06S	Ethylbenzene	3	3	U	μg/L
5/7/2019	W-06S	Fluoride, Dissolved	0.5	0.5	U	mg/L
5/7/2019	W-06S	gamma-BHC (Lindane)	0.047	0.047	U	μg/L
5/7/2019	W-06S	Heptachlor	0.047	0.047	U	μg/L
5/7/2019	W-06S	Heptachlor epoxide	0.047	0.047	U	μg/L
5/7/2019	W-06S	Hexachlorocyclopentadiene	0.7	0.7	U	μg/L
5/7/2019	W-06S	Iron, Dissolved	14300	100		μg/L
5/7/2019	W-06S	Lead, Dissolved	7.5	7.5	U	μg/L
5/7/2019	W-06S	Magnesium, Dissolved	153000	5000		μg/L
5/7/2019	W-06S	Manganese, Dissolved	506	5		μg/L
5/7/2019	W-06S	Mercury, Dissolved	0.2	0.2	U	μg/L
5/7/2019	W-06S	Methoxychlor	0.5	0.5	U	μg/L
5/7/2019	W-06S	Methylene Chloride	1.8	1.8	U	μg/L
5/7/2019	W-06S	Nickel, Dissolved	10	10	U	μg/L
5/7/2019	W-06S	Nitrate, Dissolved	0.02	0.02	U	mg/L
5/7/2019	W-06S	Pentachlorophenol	0.34	0.34	U	μg/L
5/7/2019	W-06S	Picloram	1	1	U	μg/L
5/7/2019	W-06S	Selenium, Dissolved	5	5	U	μg/L
5/7/2019	W-06S	Silver, Dissolved	10	10	U	μg/L
5/7/2019	W-06S	Simazine	4	4	U	μg/L
5/7/2019	W-06S	Styrene	2.9	2.9	U	μg/L
5/7/2019	W-06S	Sulfate, Dissolved	608	30	В	mg/L
5/7/2019	W-06S	Tetrachloroethene	2.1	2.1	U	μg/L
5/7/2019	W-06S	Thallium, Dissolved	0.2	0.2	U	μg/L
5/7/2019	W-06S	Toluene	2	2	U	μg/L
5/7/2019	W-06S	Total Dissolved Solids Field Filtered	2020	16	1	mg/L
5/7/2019	W-06S	Total Recoverable Phenolics	0.22	0.025	<u> </u>	mg/L
5/7/2019	W-06S	Toxaphene	5	5	U	μg/L
5/7/2019	W-06S	trans-1,2-Dichloroethene	3.6	3.6	U	μg/L
5/7/2019	W-06S	trans-Chlordane	0.05	0.05	U	µg/L
5/7/2019	W-06S	Trichloroethene	1.9	1.9	U	μg/L
5/7/2019	W-06S	Vinyl chloride	7.3	3.6	<b>—</b>	μg/L
5/7/2019	W-06S	Xylenes, Total	3	3	U	μg/L
5/7/2019	W-06S	Zinc, Dissolved	20	20	U	μg/L ,,
5/8/2019	PZ-04U	1,1,1-Trichloroethane	2.1	2.1	U	μg/L
5/8/2019	PZ-04U	1,1,2-Trichloroethane	1.9	1.9	U	μg/L
5/8/2019	PZ-04U	1,1-Dichloroethene	2.5	2.5	U	μg/L
5/8/2019	PZ-04U	1,2,4-Trichlorobenzene	1	1	U	µg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/8/2019	PZ-04U	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L
5/8/2019	PZ-04U	1,2-Dibromoethane	2	2	U	μg/L
5/8/2019	PZ-04U	1,2-Dichlorobenzene	0.15	0.15	U	μg/L
5/8/2019	PZ-04U	1,2-Dichloroethane	1.7	1 7	U	μg/L
5/8/2019	PZ-04U	1,2-Dichloropropane	1.7	1.7	U	μg/L
5/8/2019	PZ-04U	1,4-Dichlorobenzene	0.1	0.1	U	μg/L
5/8/2019	PZ-04U PZ-04U	2,4,5-TP (Silvex)	10	2 10	U	μg/L
5/8/2019	PZ-04U PZ-04U	2,4-D Alachlor	10	10	U	μg/L
5/8/2019 5/8/2019	PZ-04U	Aldicarb	2.5	2.5	U*	μg/L
5/8/2019	PZ-04U PZ-04U	Andicarb  Antimony, Dissolved	0.6	0.6	U	μg/L μg/L
5/8/2019	PZ-04U	Arimony, bissolved  Aroclor 1016	0.6	0.47	U	μg/L μg/L
5/8/2019	PZ-04U	Aroclor 1010  Aroclor 1221	0.47	0.47	U	μg/L μg/L
5/8/2019	PZ-04U	Aroclor 1232	0.47	0.47	U	μg/L
5/8/2019	PZ-04U	Aroclor 1242	0.47	0.47	U	μg/L μg/L
5/8/2019	PZ-04U	Aroclor 1248	0.47	0.47	Ü	μg/L
5/8/2019	PZ-04U	Aroclor 1254	0.47	0.47	U	μg/L
5/8/2019	PZ-04U	Aroclor 1260	0.47	0.47	Ü	μg/L
5/8/2019	PZ-04U	Arsenic, Dissolved	10	10	Ü	μg/L
5/8/2019	PZ-04U	Atrazine	3	3	Ü	μg/L
5/8/2019	PZ-04U	Barium, Dissolved	131	20	٨	µg/L
5/8/2019	PZ-04U	Benzene	1.6	1.6	U	μg/L
5/8/2019	PZ-04U	Benzo(a)pyrene	0.12	0.12	U	µg/L
5/8/2019	PZ-04U	Beryllium, Dissolved	0.4	0.4	U	μg/L
5/8/2019	PZ-04U	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/8/2019	PZ-04U	Boron, Dissolved	100	100	U	µg/L
5/8/2019	PZ-04U	Cadmium, Dissolved	5	5	U	µg/L
5/8/2019	PZ-04U	Calcium and Magnesium Hardness, Dissolved	450000	500		μg/L
5/8/2019	PZ-04U	Calcium, Dissolved	98800	5000		μg/L
5/8/2019	PZ-04U	Carbofuran	2.5	2.5	U	μg/L
5/8/2019	PZ-04U	Carbon tetrachloride	2	2	U	μg/L
5/8/2019	PZ-04U	Chloride, Dissolved	146	1		mg/L
5/8/2019	PZ-04U	Chlorobenzene	1.6	1.6	U	μg/L
5/8/2019	PZ-04U	Chloroethane	2.5	2.5	U	μg/L
5/8/2019	PZ-04U	Chromium, Dissolved	10	10	U	μg/L
5/8/2019	PZ-04U	cis-1,2-Dichloroethene	1.8	1.8	U	μg/L
5/8/2019	PZ-04U	cis-Chlordane	0.05	0.05	U	μg/L
5/8/2019	PZ-04U	Cobalt, Dissolved	10	10	U	μg/L
5/8/2019	PZ-04U	Copper, Dissolved	10	10	U	μg/L
5/8/2019	PZ-04U	Dalapon	1	1	U	μg/L
5/8/2019	PZ-04U	Dinoseb	1	1	U	μg/L
5/8/2019	PZ-04U	Dissolved Cyanide	0.02	0.01	В	mg/L
5/8/2019	PZ-04U	Dissolved Cyanide	0.01	0.01	UH	mg/L
5/8/2019	PZ-04U	<u>Endothall</u>	25	25	U	μg/L
5/8/2019	PZ-04U	Endrin	0.1	0.1	U	μg/L
5/8/2019	PZ-04U	Ethylbenzene	1.6	1.6	U	µg/L
5/8/2019	PZ-04U	Fluoride, Dissolved	0.5	0.5	U	mg/L
5/8/2019	PZ-04U	gamma-BHC (Lindane)	0.047	0.047	U	μg/L
5/8/2019	PZ-04U	Heptachlor	0.047	0.047	U	μg/L
5/8/2019 5/8/2019	PZ-04U PZ-04U	Heptachlor epoxide	0.047	0.047 0.7	U	µg/L
		Hexachlorocyclopentadiene  Iron, Dissolved			U	μg/L
5/8/2019 5/8/2019	PZ-04U PZ-04U	Lead, Dissolved	2310 7.5	7.5	U	μg/L
5/8/2019	PZ-04U	Magnesium, Dissolved	49200	5000	U	μg/L μg/L
5/8/2019	PZ-04U PZ-04U	Magnesium, Dissolved  Manganese, Dissolved	192	5000		μg/L μg/L
5/8/2019	PZ-04U	Mercury, Dissolved	0.2	0.2	U	
5/8/2019	PZ-04U PZ-04U	Methoxychlor	0.2	0.2	U	μg/L μg/L
5/8/2019	PZ-04U	Metholychiol  Methylene Chloride	1.3	1.3	U	
5/8/2019	PZ-04U PZ-04U	Nickel, Dissolved	1.3	1.3	U	µg/L
	PZ-04U PZ-04U	Nitrate, Dissolved	0.02	0.02	U	μg/L mg/l
5/9/2010		INITIALE, DISSOIVEA	0.02	0.02		mg/L
5/8/2019 5/8/2019	PZ-04U	Pentachlorophenol	0.34	0.34	U	μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/8/2019	PZ-04U	Selenium, Dissolved	5	5	U	μg/L
5/8/2019	PZ-04U	Silver, Dissolved	10	10	U	μg/L
5/8/2019	PZ-04U	Simazine	4	4	U	μg/L
5/8/2019	PZ-04U	Styrene	1.7	1.7	U	μg/L
5/8/2019 5/8/2019	PZ-04U PZ-04U	Sulfate, Dissolved Tetrachloroethene	1.5 2.1	1.5 2.1	U F1	mg/L
5/8/2019	PZ-04U	Thallium, Dissolved	0.2	0.2	U	μg/L μg/L
5/8/2019	PZ-04U	Toluene	1.6	1.6	U	μg/L μg/L
5/8/2019	PZ-04U	Total Dissolved Solids Field Filtered	592	5		mg/L
5/8/2019	PZ-04U	Total Recoverable Phenolics	0.011	0.005		mg/L
5/8/2019	PZ-04U	Toxaphene	5	5	U	μg/L
5/8/2019	PZ-04U	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/8/2019	PZ-04U	trans-Chlordane	0.05	0.05	U	μg/L
5/8/2019	PZ-04U	Trichloroethene	1.9	1.9	U	μg/L
5/8/2019	PZ-04U	Vinyl chloride	2.3	2.3	U	μg/L
5/8/2019	PZ-04U	Xylenes, Total	3	3	U	μg/L
5/8/2019	PZ-04U	Zinc, Dissolved	20	20	U	μg/L
5/8/2019	W-03D	1,1,1-Trichloroethane	2.1	2.1	U	μg/L
5/8/2019	W-03D	1,1,2-Trichloroethane	1.9	1.9	U	μg/L
5/8/2019	W-03D	1,1-Dichloroethene	2.5	2.5	U	μg/L
5/8/2019	W-03D	1,2,4-Trichlorobenzene	1 -	1	U	μg/L
5/8/2019	W-03D	1,2-Dibromo-3-Chloropropane	5	5	U	μg/L
5/8/2019	W-03D W-03D	1,2-Dibromoethane	0.15	2 0.15	U	μg/L
5/8/2019 5/8/2019	W-03D	1,2-Dichlorobenzene 1,2-Dichloroethane	0.15	0.15	U	µg/L
5/8/2019	W-03D	1,2-Dichloropropane	1.7	1.7	U	μg/L μg/L
5/8/2019	W-03D	1,4-Dichlorobenzene	0.1	0.1	U	μg/L μg/L
5/8/2019	W-03D	2,4,5-TP (Silvex)	2	2	U	μg/L μg/L
5/8/2019	W-03D	2,4-D	10	10	U	μg/L
5/8/2019	W-03D	Alachlor	1	1	Ü	µg/L
5/8/2019	W-03D	Aldicarb	2.5	2.5	U *	μg/L
5/8/2019	W-03D	Alkalinity, Total	359	10		mg/L
5/8/2019	W-03D	Ammonia as N	0.15	0.1		mg/L AS N
5/8/2019	W-03D	Antimony, Dissolved	0.6	0.6	U	μg/L
5/8/2019	W-03D	Aroclor 1016	0.47	0.47	U	μg/L
5/8/2019	W-03D	Aroclor 1221	0.47	0.47	U	μg/L
5/8/2019	W-03D	Aroclor 1232	0.47	0.47	U	μg/L
5/8/2019	W-03D	Aroclor 1242	0.47	0.47	U	μg/L
5/8/2019	W-03D	Aroclor 1248	0.47	0.47	U	μg/L
5/8/2019	W-03D	Aroclor 1254	0.47	0.47	U	μg/L
5/8/2019	W-03D	Aroclor 1260	0.47	0.47	U	μg/L
5/8/2019 5/8/2019	W-03D W-03D	Arsenic, Dissolved Atrazine	10	10 3	U	μg/L μg/L
5/8/2019	W-03D	Barium, Dissolved	200	200	U ^	μg/L
5/8/2019	W-03D	Benzene	1.6	1.6	U	μg/L
5/8/2019	W-03D	Benzo(a)pyrene	0.12	0.12	U	µg/L
5/8/2019	W-03D	Beryllium, Dissolved	0.4	0.4	Ü	µg/L
5/8/2019	W-03D	Biochemical Oxygen Demand	2	2	U	mg/L
5/8/2019	W-03D	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	μg/L
5/8/2019	W-03D	Boron, Dissolved	100	100	U	μg/L
5/8/2019	W-03D	Cadmium, Dissolved	5	5	U	μg/L
5/8/2019	W-03D	Calcium and Magnesium Hardness, Dissolved	491000	500		μg/L
5/8/2019	W-03D	Calcium, Dissolved	96800	5000		μg/L
5/8/2019	W-03D	Carbofuran	2.5	2.5	U	μg/L
5/8/2019	W-03D	Carbon tetrachloride	2	2	U	µg/L
5/8/2019 5/8/2019	W-03D	Chloride, Dissolved	132	1.7	1	mg/L
5/8/7019	W-03D W-03D	Chlorobenzene	1.6	1.6	U	µg/L
	vv_( 1 <b>&lt;</b> ( )	Chloroethane	2.5	2.5	U	μg/L
5/8/2019		Chromium Dissolverd	10	1 🗅	1.1	
5/8/2019 5/8/2019	W-03D	Chromium, Dissolved	10	10	U	µg/L
5/8/2019		Chromium, Dissolved cis-1,2-Dichloroethene cis-Chlordane	10 1.8 0.05	10 1.8 0.05	U	μg/L μg/L μg/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/8/2019	W-03D	Copper, Dissolved	10	10	U	μg/L
5/8/2019	W-03D	Dalapon	1	1	U	μg/L
5/8/2019	W-03D	Dinoseb	1	1	U *	μg/L
5/8/2019	W-03D	Dissolved Cyanide	0.019	0.01	В	mg/L
5/8/2019	W-03D	Dissolved Cyanide	0.01	0.01	UH	mg/L
5/8/2019	W-03D	Endothall	25	25	U	μg/L
5/8/2019	W-03D	<u>Endrin</u>	0.1	0.1	U	μg/L
5/8/2019	W-03D	Ethane	15	15	U*	μg/L
5/8/2019	W-03D	Ethene	13	13	U	µg/L
5/8/2019 5/8/2019	W-03D W-03D	Ethylbenzene Fluoride, Dissolved	1.6 0.5	1.6 0.5	U	µg/L
5/8/2019	W-03D W-03D	gamma-BHC (Lindane)	0.05	0.05	U	mg/L μg/L
5/8/2019	W-03D W-03D	Heptachlor	0.05	0.05	U	μg/L μg/L
5/8/2019	W-03D	Heptachlor epoxide	0.05	0.05	U	μg/L μg/L
5/8/2019	W-03D	Hexachlorocyclopentadiene	0.7	0.03	U	μg/L μg/L
5/8/2019	W-03D	Iron, Dissolved	1780	100	- 0	μg/L
5/8/2019	W-03D	Lead, Dissolved	7.5	7.5	U	μg/L
5/8/2019	W-03D	Magnesium, Dissolved	60500	5000		μg/L
5/8/2019	W-03D	Manganese, Dissolved	57.2	5		μg/L
5/8/2019	W-03D	Mercury, Dissolved	0.2	0.2	U	μg/L
5/8/2019	W-03D	Methane	28	8		µg/L
5/8/2019	W-03D	Methoxychlor	0.5	0.5	U	μg/L
5/8/2019	W-03D	Methylene Chloride	1.3	1.3	U	μg/L
5/8/2019	W-03D	Nickel, Dissolved	10	10	Ü	µg/L
5/8/2019	W-03D	Nitrate, Dissolved	0.02	0.02	U	mg/L AS N
5/8/2019	W-03D	Nitrite	0.02	0.02	U	mg/L AS N
5/8/2019	W-03D	Nitrogen, Nitrate	0.02	0.02	U	mg/L AS N
5/8/2019	W-03D	Orthophosphate	0.038	0.02		mg/L AS P
5/8/2019	W-03D	Pentachlorophenol	0.34	0.34	U	μg/L
5/8/2019	W-03D	Picloram	1	1	U	μg/L
5/8/2019	W-03D	Selenium, Dissolved	5	5	U	μg/L
5/8/2019	W-03D	Silver, Dissolved	10	10	U	μg/L
5/8/2019	W-03D	Simazine	4	4	U	μg/L
5/8/2019	W-03D	Styrene	1.7	1.7	U	μg/L
5/8/2019	W-03D	Sulfate	69.2	3		mg/L
5/8/2019	W-03D	Sulfate, Dissolved	85	3		mg/L
5/8/2019	W-03D	Sulfide	1	1	U	mg/L
5/8/2019	W-03D	Tetrachloroethene	2.1	2.1	U	μg/L
5/8/2019	W-03D	Thallium, Dissolved	0.2	0.2	U	μg/L
5/8/2019	W-03D	Toluene	1.6	1.6	U	μg/L
5/8/2019	W-03D	Total Dissolved Solids Field Filtered	586	5		mg/L
5/8/2019	W-03D	Total Kjeldahl Nitrogen	0.65	0.15		mg/L AS N
5/8/2019	W-03D	Total Organic Carbon	1.3	1	Н	mg/L
5/8/2019	W-03D	Total Organic Carbon	2	1		mg/L
5/8/2019	W-03D	Total Recoverable Phenolics	0.0052	0.005		mg/L
5/8/2019	W-03D	Toxaphene	5	5	U	μg/L
5/8/2019	W-03D	trans-1,2-Dichloroethene	1.9	1.9	U	μg/L
5/8/2019	W-03D	trans-Chlordane	0.05	0.05	U	μg/L
5/8/2019	W-03D	Trichloroethene	1.9	1.9	U	μg/L
5/8/2019 5/8/2019	W-03D W-03D	Vinyl chloride	2.3	2.3	U	µg/L
		Xylenes, Total Zinc, Dissolved	3 20	20	U	μg/L
5/8/2019 11/4/2019	W-03D R-01D	1,1,1-Trichloroethane	2.1	2.1	U	μg/L UG/L
11/4/2019	R-01D	1,1,2-Trichloroethane	1.9	1.9	U	UG/L UG/L
11/4/2019	R-01D	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/4/2019	R-01D	1,2,4-Trichlorobenzene	2.5	1	U	UG/L
11/4/2019	R-01D	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/4/2019	R-01D	1,2-Dibromoethane	2	2	U	UG/L
11/4/2019	R-01D	1,2-Dichloroethane	1	1	U	UG/L
11/4/2019	R-01D	1,2-Dichloropropane	1.7	1.7	U	UG/L
	R-01D	Alkalinity, Total	284	1.7	U	MG/L
11/4/2019						

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/4/2019	R-01D	Antimony, Dissolved	0.6	0.6	U	UG/L
11/4/2019	R-01D	Arsenic, Dissolved	10	10	U	UG/L
11/4/2019	R-01D	Barium, Dissolved	200	200	U	UG/L
11/4/2019	R-01D	Benzene	1.6	1.6	U	UG/L
11/4/2019	R-01D	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/4/2019	R-01D	Biochemical Oxygen Demand	2	2	U	MG/L
11/4/2019	R-01D	Boron, Dissolved	306	100		UG/L
11/4/2019	R-01D	Cadmium, Dissolved	5	5	U	UG/L
11/4/2019	R-01D	Calcium and Magnesium Hardness, Dissolved	279000	500		UG/L
11/4/2019	R-01D	Calcium, Dissolved	52500	5000		UG/L
11/4/2019	R-01D	Carbon tetrachloride	2	2	U	UG/L
11/4/2019	R-01D	Chloride, Dissolved	28.3	1		MG/L
11/4/2019	R-01D	Chlorobenzene	1.6	1.6	U	UG/L
11/4/2019	R-01D	Chloroethane	2.5	2.5	U	UG/L
11/4/2019	R-01D	Chromium, Dissolved	10	10	U	UG/L
11/4/2019	R-01D	cis-1,2-Dichloroethene	1.8	1.8	Ü	UG/L
11/4/2019	R-01D	Cobalt, Dissolved	10	10	Ü	UG/L
11/4/2019	R-01D	Copper, Dissolved	10	10	Ü	UG/L
11/4/2019	R-01D	Dissolved Cyanide	0.01	0.01	UH*	MG/L
11/4/2019	R-01D	Ethane	15	15	U	UG/L
11/4/2019	R-01D	Ethene	13	13	U	UG/L
11/4/2019	R-01D	Ethylbenzene	1.6	1.6	Ü	UG/L
11/4/2019	R-01D	Fluoride, Dissolved	0.74	0.5		MG/L
11/4/2019	R-01D	Iron, Dissolved	783	100		UG/L
11/4/2019	R-01D	Lead, Dissolved	7.5	7.5	U	UG/L
11/4/2019	R-01D	Magnesium, Dissolved	36000	5000	- 0	UG/L
11/4/2019	R-01D	Manganese, Dissolved	13.1	5		UG/L
11/4/2017	R-01D	Mercury, Dissolved	0.2	0.2	U	UG/L
11/4/2017	R-01D	Metcary, Dissolved  Methane	16	8	0	UG/L
11/4/2017	R-01D	Methylene Chloride	1.3	1.3	U	UG/L
11/4/2017	R-01D	Nickel, Dissolved	1.0	1.0	U	UG/L
11/4/2019	R-01D	Nitrate, Dissolved	0.02	0.02	U	MG/L
11/4/2017	R-01D	Nitrite	0.02	0.02	U	MG/L AS N
11/4/2019	R-01D	Nitrogen, Nitrate	0.02	0.02	U	MG/L AS N
11/4/2019	R-01D	Orthophosphate	0.02	0.02	U	MG/L AS P
11/4/2019	R-01D	Selenium, Dissolved	5	5	U	UG/L
11/4/2019	R-01D	Silver, Dissolved	10	10	U	UG/L
11/4/2019	R-01D	Styrene	1.7	1.7	U	UG/L
11/4/2019	R-01D	Sulfate	35	1.5	U	MG/L
			35	1.5		
11/4/2019	R-01D	Sulfate, Dissolved Sulfide	33	1.5	U	MG/L MG/L
11/4/2019	R-01D		+	•		
11/4/2019	R-01D	Tetrachloroethene	2.1	2.1	U	UG/L
11/4/2019	R-01D	Thallium, Dissolved	0.2	0.2	U	UG/L
11/4/2019	R-01D	Total Dissolved Solids Field Filtered	375	1.6 5	U	UG/L
11/4/2019	R-01D R-01D	Total Dissolved Solids Field Filtered			-	MG/L
11/4/2019		Total Kjeldahl Nitrogen	0.81	0.15	11	MG/L AS N
11/4/2019	R-01D	Total Organic Carbon	1.0	1.0	U	MG/L
11/4/2019	R-01D	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/4/2019	R-01D	Trichloroethene		1.9	U	UG/L
11/4/2019	R-01D	Vinyl chloride	2.3	2.3	U	UG/L
11/4/2019	R-01D	Xylenes, Total	3	3	U	UG/L
11/4/2019	R-01D	Zinc, Dissolved	20	20	U	UG/L
11/4/2019	US-01D	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/4/2019	US-01D	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/4/2019	US-01D	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/4/2019	US-01D	1,2,4-Trichlorobenzene		<u> </u>	U	UG/L
11/4/2019	US-01D	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/4/2019	US-01D	1,2-Dibromoethane	2	2	U	UG/L
11/4/2019	US-01D	1,2-Dichloroethane	1	1	U	UG/L
11/4/2019	US-01D	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/4/2019	US-01D	Alkalinity, Total	245	10		MG/L
11/4/2019	US-01D	Ammonia	0.95	0.1	1	MG/L AS N

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/4/2019	US-01D	Antimony, Dissolved	0.6	0.6	U	UG/L
11/4/2019	US-01D	Arsenic, Dissolved	10	10	U	UG/L
11/4/2019	US-01D	Barium, Dissolved	200	200	U	UG/L
11/4/2019	US-01D	Benzene	1.6	1.6	U	UG/L
11/4/2019	US-01D	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/4/2019	US-01D	Biochemical Oxygen Demand	2	2	U	MG/L
11/4/2019	US-01D	Boron, Dissolved	282	100		UG/L
11/4/2019	US-01D	Cadmium, Dissolved	5	5	U	UG/L
11/4/2019	US-01D	Calcium and Magnesium Hardness, Dissolved	360000	500		UG/L
11/4/2019	US-01D	Calcium, Dissolved	66300	5000		UG/L
11/4/2019	US-01D	Carbon tetrachloride	2	2	U	UG/L
11/4/2019	US-01D	Chloride, Dissolved	13.5	1		MG/L
11/4/2019	US-01D	Chlorobenzene	1.6	1.6	U	UG/L
11/4/2019	US-01D	Chloroethane	2.5	2.5	U	UG/L
11/4/2019	US-01D	Chromium, Dissolved	10	10	U	UG/L
11/4/2019	US-01D	cis-1,2-Dichloroethene	1.8	1.8	Ü	UG/L
11/4/2019	US-01D	Cobalt, Dissolved	10	10	Ü	UG/L
11/4/2019	US-01D	Copper, Dissolved	10	10	Ü	UG/L
11/4/2019	US-01D	Dissolved Cyanide	0.01	0.01	UH*	MG/L
11/4/2019	US-01D	Ethane	15	15	U	UG/L
11/4/2019	US-01D	Ethene	13	13	U	UG/L
11/4/2019	US-01D	Ethylbenzene	1.6	1.6	U	UG/L
11/4/2019	US-01D	Fluoride, Dissolved	0.52	0.5		MG/L
11/4/2019	US-01D	Iron, Dissolved	503	100		UG/L
11/4/2019	US-01D	Lead, Dissolved	7.5	7.5	U	UG/L
11/4/2019	US-01D	Magnesium, Dissolved	47200	5000		UG/L
11/4/2019	US-01D	Manganese, Dissolved	34.7	5		UG/L
11/4/2017	US-01D	Mercury, Dissolved	0.2	0.2	U	UG/L
11/4/2019	US-01D	Methane	16	8	0	UG/L
11/4/2017	US-01D	Methylene Chloride	1.3	1.3	U	UG/L
11/4/2017	US-01D	Nickel, Dissolved	1.0	1.0	U	UG/L
11/4/2019	US-01D	Nitrate, Dissolved	0.066	0.02	U	MG/L
11/4/2017	US-01D	Nitrite	0.00	0.02	U	MG/L AS N
11/4/2019	US-01D	Nitrogen, Nitrate	0.02	0.02	U	MG/L AS N
11/4/2019	US-01D	Orthophosphate	0.02	0.02	U	MG/L AS P
11/4/2019	US-01D	Selenium, Dissolved	5	5	U	UG/L
11/4/2019	US-01D	Silver, Dissolved	10	10	U	UG/L
11/4/2019	US-01D	Styrene	1.7	1.7	U	UG/L
11/4/2019	US-01D	Sulfate	1.7	7.5	U	MG/L
			155			
11/4/2019 11/4/2019	US-01D US-01D	Sulfate, Dissolved Sulfide	155	7.5	U	MG/L MG/L
			+	0.1	1	
11/4/2019	US-01D	Tetrachloroethene	2.1	2.1	U	UG/L
11/4/2019	US-01D	Thallium, Dissolved	0.2	0.2	U	UG/L
11/4/2019	US-01D US-01D	Total Dissolved Solids Field Filtered	477	1.6 5	U	UG/L
11/4/2019		Total Dissolved Solids Field Filtered	4//		-	MG/L
11/4/2019	US-01D	Total Kjeldahl Nitrogen	1.0	0.15	-	MG/L AS N
11/4/2019	US-01D	Total Organic Carbon	1.2	1.0	11	MG/L
11/4/2019	US-01D	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/4/2019	US-01D	Trichloroethene		1.9	U	UG/L
11/4/2019	US-01D	Vinyl chloride	2.3	2.3	U	UG/L
11/4/2019	US-01D	Xylenes, Total	3	3	U	UG/L
11/4/2019	US-01D	Zinc, Dissolved	20	20	U	UG/L
11/4/2019	US-02D	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/4/2019	US-02D	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/4/2019	US-02D	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/4/2019	US-02D	1,2,4-Trichlorobenzene		1 -	U	UG/L
11/4/2019	US-02D	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/4/2019	US-02D	1,2-Dibromoethane	2	2	U	UG/L
11/4/2019	US-02D	1,2-Dichloroethane	1	1	U	UG/L
11/4/2019	US-02D	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/4/2019	US-02D	Alkalinity, Total	304	10		MG/L
11/4/2019	US-02D	Ammonia	0.75	0.1		MG/L AS N

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/4/2019	US-02D	Antimony, Dissolved	0.6	0.6	U	UG/L
11/4/2019	US-02D	Arsenic, Dissolved	10	10	U	UG/L
11/4/2019	US-02D	Barium, Dissolved	200	200	U	UG/L
11/4/2019	US-02D	Benzene	1.6	1.6	U	UG/L
11/4/2019	US-02D	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/4/2019	US-02D	Biochemical Oxygen Demand	3	2		MG/L
11/4/2019	US-02D	Boron, Dissolved	305	100		UG/L
11/4/2019	US-02D	Cadmium, Dissolved	5	5	U	UG/L
11/4/2019	US-02D	Calcium and Magnesium Hardness, Dissolved	294000	500		UG/L
11/4/2019	US-02D	Calcium, Dissolved	55300	5000		UG/L
11/4/2019	US-02D	Carbon tetrachloride	2	2	U	UG/L
11/4/2019	US-02D	Chloride, Dissolved	26.5	1		MG/L
11/4/2019	US-02D	Chlorobenzene	1.6	1.6	U	UG/L
11/4/2019	US-02D	Chloroethane	2.5	2.5	U	UG/L
11/4/2019	US-02D	Chromium, Dissolved	10	10	U	UG/L
11/4/2019	US-02D	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/4/2019	US-02D	Cobalt, Dissolved	1.0	1.0	U	UG/L
		Copper, Dissolved	10		U	
11/4/2019	US-02D			10		UG/L
11/4/2019	US-02D	Dissolved Cyanide	0.01	0.01	U H *	MG/L
11/4/2019	US-02D	Ethane	15	15	U	UG/L
11/4/2019	US-02D	Ethene	13	13	U	UG/L
11/4/2019	US-02D	Ethylbenzene	1.6	1.6	U	UG/L
11/4/2019	US-02D	Fluoride, Dissolved	0.66	0.5		MG/L
11/4/2019	US-02D	Iron, Dissolved	504	100		UG/L
11/4/2019	US-02D	Lead, Dissolved	7.5	7.5	U	UG/L
11/4/2019	US-02D	Magnesium, Dissolved	38000	5000		UG/L
11/4/2019	US-02D	Manganese, Dissolved	30.5	5		UG/L
11/4/2019	US-02D	Mercury, Dissolved	0.2	0.2	U	UG/L
11/4/2019	US-02D	Methane	8	8	U	UG/L
11/4/2019	US-02D	Methylene Chloride	1.3	1.3	U	UG/L
11/4/2019	US-02D	Nickel, Dissolved	10	10	U	UG/L
11/4/2019	US-02D	Nitrate, Dissolved	0.56	0.02		MG/L
11/4/2019	US-02D	Nitrite	0.02	0.02	U	MG/L AS N
11/4/2019	US-02D	Nitrogen, Nitrate	0.02	0.02	U	MG/L AS N
11/4/2019	US-02D	Orthophosphate	0.35	0.02		MG/L AS P
11/4/2019	US-02D	Selenium, Dissolved	5	5	U	UG/L
11/4/2019	US-02D	Silver, Dissolved	10	10	Ü	UG/L
11/4/2019	US-02D	Styrene	1.7	1.7	Ü	UG/L
11/4/2019	US-02D	Sulfate	31.1	1.5		MG/L
11/4/2019	US-02D	Sulfate, Dissolved	31.1	1.5		MG/L
11/4/2019	US-02D	Sulfide	1	1.5	U	MG/L MG/L
	US-02D		· · · · · · · · · · · · · · · · · · ·	•	1	
11/4/2019		Tetrachloroethene	2.1	2.1	U	UG/L
11/4/2019	US-02D	Thallium, Dissolved	0.2	0.2	U	UG/L
11/4/2019	US-02D	Toluene Total Disselved Solids Field Filtered	1.6	1.6	U	UG/L
11/4/2019	US-02D	Total Dissolved Solids Field Filtered	396	5		MG/L
11/4/2019	US-02D	Total Kjeldahl Nitrogen	0.94	0.15	F1	MG/L AS N
11/4/2019	US-02D	Total Organic Carbon	1.3	<u> </u>	L	MG/L
11/4/2019	US-02D	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/4/2019	US-02D	Trichloroethene	1.9	1.9	U	UG/L
11/4/2019	US-02D	Vinyl chloride	2.3	2.3	U	UG/L
11/4/2019	US-02D	Xylenes, Total	3	3	U	UG/L
11/4/2019	US-02D	Zinc, Dissolved	20	20	U	UG/L
11/5/2019	PZ-03U	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/5/2019	PZ-03U	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/5/2019	PZ-03U	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/5/2019	PZ-03U	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/5/2019	PZ-03U	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/5/2019	PZ-03U	1,2-Dibromoethane	2	2	U	UG/L
11/5/2019	PZ-03U	1,2-Dichloroethane	1	1	Ü	UG/L
11/5/2019	PZ-03U	1,2-Dichloropropane	1.7	1.7	U	UG/L
	000					
11/5/2019	PZ-03U	Antimony, Dissolved	0.6	0.6	U	UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	PZ-03U	Barium, Dissolved	200	200	U	UG/L
11/5/2019	PZ-03U	Benzene	1.6	1.6	U	UG/L
11/5/2019	PZ-03U	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/5/2019	PZ-03U	Boron, Dissolved	100	100	U	UG/L
11/5/2019	PZ-03U	Cadmium, Dissolved	5	5	U	UG/L
11/5/2019	PZ-03U	Calcium and Magnesium Hardness, Dissolved	452000	500		UG/L
11/5/2019	PZ-03U	Calcium, Dissolved	108000	5000		UG/L
11/5/2019	PZ-03U	Carbon tetrachloride	2	2	U	UG/L
11/5/2019	PZ-03U	Chloride, Dissolved	135	1		MG/L
11/5/2019	PZ-03U	Chlorobenzene	1.6	1.6	U	UG/L
11/5/2019	PZ-03U	Chromium, Dissolved	10	10	U	UG/L
11/5/2019	PZ-03U	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/5/2019	PZ-03U	Cobalt, Dissolved	10	10	U	UG/L
11/5/2019	PZ-03U	Copper, Dissolved	10	10	U	UG/L
11/5/2019	PZ-03U	Dissolved Cyanide	0.01	0.01	U *	MG/L
11/5/2019	PZ-03U	Ethylbenzene	1.6	1.6	U	UG/L
11/5/2019	PZ-03U	Fluoride, Dissolved	0.5	0.5	U	MG/L
11/5/2019	PZ-03U	Iron, Dissolved	4910	100		UG/L
11/5/2019	PZ-03U	Lead, Dissolved	7.5	7.5	U	UG/L
11/5/2019	PZ-03U	Magnesium, Dissolved	44500	5000		UG/L
11/5/2019	PZ-03U	Manganese, Dissolved	102	5		UG/L
11/5/2019	PZ-03U	Mercury, Dissolved	0.2	0.2	U	UG/L
11/5/2019	PZ-03U	Methylene Chloride	1.3	1.3	U	UG/L
11/5/2019	PZ-03U	Nickel, Dissolved	10	10	U	UG/L
11/5/2019	PZ-03U	Nitrate, Dissolved	0.02	0.02	U	MG/L
11/5/2019	PZ-03U	Selenium, Dissolved	5	5	U	UG/L
11/5/2019	PZ-03U	Silver, Dissolved	10	10	U	UG/L
11/5/2019	PZ-03U	Styrene	1.7	1.7	U	UG/L
11/5/2019	PZ-03U	Sulfate, Dissolved	1.5	1.5	U	MG/L
11/5/2019	PZ-03U	Tetrachloroethene	2.1	2.1	U	UG/L
11/5/2019	PZ-03U	Thallium, Dissolved	0.2	0.2	U	UG/L
11/5/2019	PZ-03U	Toluene	1.6	1.6	U	UG/L
11/5/2019	PZ-03U	Total Dissolved Solids Field Filtered	574	5		MG/L
11/5/2019	PZ-03U	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/5/2019	PZ-03U	Trichloroethene	1.9	1.9	U	UG/L
11/5/2019	PZ-03U	Vinyl chloride	2.3	2.3	U	UG/L
11/5/2019	PZ-03U	Xylenes, Total	3	3	U	UG/L
11/5/2019	PZ-03U	Zinc, Dissolved	20	20	U	UG/L
11/5/2019	US-03D	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/5/2019	US-03D	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/5/2019	US-03D	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/5/2019	US-03D	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/5/2019	US-03D	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/5/2019	US-03D	1,2-Dibromoethane	2	2	U	UG/L
11/5/2019	US-03D	1,2-Dichloroethane	1	1	U	UG/L
11/5/2019	US-03D	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/5/2019	US-03D	Alkalinity, Total	372	10		MG/L
11/5/2019	US-03D	Ammonia	0.4	0.1		MG/L AS N
11/5/2019	US-03D	Antimony, Dissolved	0.6	0.6	U * ^	UG/L
11/5/2019	US-03D	Arsenic, Dissolved	10	10	U	UG/L
11/5/2019	US-03D	Barium, Dissolved	200	200	Ü	UG/L
11/5/2019	US-03D	Benzene	1.6	1.6	U	UG/L
11/5/2019	US-03D	Beryllium, Dissolved	0.4	0.4	Ü	UG/L
11/5/2019	US-03D	Biochemical Oxygen Demand	2	2	U	MG/L
11/5/2019	US-03D	Boron, Dissolved	100	100	U	UG/L
11/5/2019	US-03D	Cadmium, Dissolved	5	5	U	UG/L
11/5/2019	US-03D	Calcium and Magnesium Hardness, Dissolved	473000	500		UG/L
11/5/2019	US-03D	Calcium, Dissolved	102000	5000		UG/L
11/5/2019	US-03D	Carbon tetrachloride	2	2	U	UG/L
11/5/2019	US-03D	Carbon remachionae  Chloride, Dissolved	244	3.4	U	MG/L
11/5/2019	US-03D		1.6	1.6	U	UG/L
11/3/2019	US-USD	Chlorobenzene	2.5	2.5	U	UG/L

11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	US-03D US-03D US-03D US-03D US-03D US-03D	Chromium, Dissolved cis-1,2-Dichloroethene Cobalt, Dissolved Copper, Dissolved Dissolved Cyanide	10 260 10	10 1.8 10 10	U E U	UG/L UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	US-03D US-03D US-03D US-03D	Cobalt, Dissolved Copper, Dissolved	10 10	10	U	UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	US-03D US-03D US-03D	Copper, Dissolved	10			
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	US-03D US-03D			10	1 11	
11/5/2019 11/5/2019 11/5/2019 11/5/2019	US-03D	Dissolved Cyapide				UG/L
11/5/2019 11/5/2019 11/5/2019			0.01	0.01	U * ^	MG/L
11/5/2019 11/5/2019		Dissolved Cyanide	0.01	0.01	UH	MG/L
11/5/2019	US-03D	Ethane	15	15	U	UG/L
	US-03D	Ethene	13	13	U	UG/L
11/5/7/110	US-03D	Ethylbenzene	1.6	1.6	U	UG/L
	US-03D	Fluoride, Dissolved	0.51	0.5		MG/L
11/5/2019	US-03D	Iron, Dissolved	2820	100		UG/L
11/5/2019	US-03D	Lead, Dissolved	7.5	7.5	U	UG/L
11/5/2019	US-03D	Magnesium, Dissolved	52700	5000 5		UG/L
11/5/2019 11/5/2019	US-03D US-03D	Manganese, Dissolved  Mercury, Dissolved	38.4	0.2	U	UG/L
11/5/2019	US-03D	Metcury, dissolved  Methane	0.2 52	8	U	UG/L UG/L
11/5/2019	US-03D	Methylene Chloride	1.3	1.3	U	UG/L
11/5/2019	US-03D	Nickel, Dissolved	1.3	1.3	U	UG/L
11/5/2019	US-03D	Nitrate, Dissolved	0.02	0.02	U	MG/L
11/5/2019	US-03D	Nitrite	0.02	0.02	U	MG/L AS N
11/5/2019	US-03D	Nitrogen, Nitrate	0.02	0.02	U	MG/L AS N
11/5/2019	US-03D	Orthophosphate	0.028	0.02	0	MG/L AS P
11/5/2019	US-03D	Selenium, Dissolved	5	5	UΛ	UG/L
11/5/2019	US-03D	Silver, Dissolved	10	10	U	UG/L
11/5/2019	US-03D	Styrene	1.7	1.7	U	UG/L
11/5/2019	US-03D	Sulfate	59	3		MG/L
11/5/2019	US-03D	Sulfate, Dissolved	53.5	4.5		MG/L
11/5/2019	US-03D	Sulfide	1	1	U	MG/L
11/5/2019	US-03D	Tetrachloroethene	2.1	2.1	U	UG/L
11/5/2019	US-03D	Thallium, Dissolved	0.2	0.2	Ü	UG/L
11/5/2019	US-03D	Toluene	1.6	1.6	U	UG/L
11/5/2019	US-03D	Total Dissolved Solids Field Filtered	693	5	_	MG/L
11/5/2019	US-03D	Total Kjeldahl Nitrogen	0.45	0.15		MG/L AS N
11/5/2019	US-03D	Total Organic Carbon	1	1	U	MG/L
11/5/2019	US-03D	trans-1,2-Dichloroethene	33	1.9		UG/L
11/5/2019	US-03D	Trichloroethene	1.9	1.9	U	UG/L
11/5/2019	US-03D	Vinyl chloride	69	2.3		UG/L
11/5/2019	US-03D	Xylenes, Total	3	3	U	UG/L
11/5/2019	US-03D	Zinc, Dissolved	20	20	U	UG/L
11/5/2019	US-03D	1,1,1-Trichloroethane	4.1	4.1	U DL	UG/L
11/5/2019	US-03D	1,1,2-Trichloroethane	1.9	1.9	U DL	UG/L
11/5/2019	US-03D	1,1-Dichloroethene	2.5	2.5	U DL	UG/L
11/5/2019	US-03D	1,2,4-Trichlorobenzene	2.1	2.1	U DL	UG/L
11/5/2019	US-03D	1,2-Dibromo-3-Chloropropane	5	5	U DL	UG/L
11/5/2019	US-03D	1,2-Dibromoethane	3.7	3.7	U DL	UG/L
11/5/2019	US-03D	1,2-Dichloroethane	1.1	1.1	U DL	UG/L
11/5/2019	US-03D	1,2-Dichloropropane	3.6	3.6	U DL	UG/L
11/5/2019	US-03D	Benzene	2.1	2.1	U DL	UG/L
11/5/2019	US-03D	Carbon tetrachloride	2	2	U DL	UG/L
11/5/2019	US-03D	Chlorobenzene	3.8	3.8	U DL	UG/L
11/5/2019	US-03D	Chloroethane	2.5	2.5	U DL	UG/L
11/5/2019	US-03D	cis-1,2-Dichloroethene	260	4.1	DL	UG/L
11/5/2019	US-03D	Ethylbenzene	3.7	3.7	U DL	UG/L
11/5/2019	US-03D	Methylene Chloride	2.2	2.2	U DL	UG/L
11/5/2019	US-03D	Styrene	3.7	3.7	U DL	UG/L
11/5/2019	US-03D	Tetrachloroethene	2.1	2.1	U DL	UG/L
11/5/2019	LIC OOD	Toluene	2.6	2.6	U DL	UG/L
11/5/2019 11/5/2019	US-03D				1	110 "
11/5/2019 11/5/2019 11/5/2019	US-03D	trans-1,2-Dichloroethene	34	4.5	DL	UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019	US-03D US-03D	trans-1,2-Dichloroethene Trichloroethene	34 2.3	4.5 2.3	DL U DL	UG/L
11/5/2019 11/5/2019 11/5/2019	US-03D	trans-1,2-Dichloroethene	34	4.5	DL	

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	US-04D	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/5/2019	US-04D	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/5/2019	US-04D	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/5/2019	US-04D	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/5/2019	US-04D	1,2-Dibromoethane	2	2	U	UG/L
11/5/2019	US-04D	1,2-Dichloroethane	1	1	U	UG/L
11/5/2019	US-04D	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/5/2019	US-04D	Alkalinity, Total	203	10		MG/L
11/5/2019	US-04D	Antimony Dissolved	0.86	0.1	U* ^	MG/L AS N
11/5/2019 11/5/2019	US-04D US-04D	Antimony, Dissolved Arsenic, Dissolved	0.6	0.6 10	U	UG/L UG/L
11/5/2019	US-04D	Barium, Dissolved	200	200	U	UG/L
11/5/2019	US-04D	Benzene	1.6	1.6	U	UG/L
11/5/2019	US-04D	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/5/2019	US-04D	Biochemical Oxygen Demand	2	2	U	MG/L
11/5/2019	US-04D	Boron, Dissolved	431	100		UG/L
11/5/2019	US-04D	Cadmium, Dissolved	5	5	U	UG/L
11/5/2019	US-04D	Calcium and Magnesium Hardness, Dissolved	175000	500		UG/L
11/5/2019	US-04D	Calcium, Dissolved	32800	5000		UG/L
11/5/2019	US-04D	Carbon tetrachloride	2	2	U	UG/L
11/5/2019	US-04D	Chloride, Dissolved	26.5	1	, i	MG/L
11/5/2019	US-04D	Chlorobenzene	1.6	1.6	U	UG/L
11/5/2019	US-04D	Chloroethane	2.5	2.5	U	UG/L
11/5/2019	US-04D	Chromium, Dissolved	10	10	U	UG/L
11/5/2019	US-04D	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/5/2019	US-04D	Cobalt, Dissolved	10	10	U	UG/L
11/5/2019	US-04D	Copper, Dissolved	10	10	U	UG/L
11/5/2019	US-04D	Dissolved Cyanide	0.01	0.01	U *	MG/L
11/5/2019	US-04D	Ethane	15	15	U	UG/L
11/5/2019	US-04D	Ethene	13	13	U	UG/L
11/5/2019	US-04D	Ethylbenzene	1.6	1.6	U	UG/L
11/5/2019	US-04D	Fluoride, Dissolved	0.97	0.5		MG/L
11/5/2019	US-04D	Iron, Dissolved	100	100	U	UG/L
11/5/2019	US-04D	Lead, Dissolved	7.5	7.5	U	UG/L
11/5/2019	US-04D	Magnesium, Dissolved	22600	5000		UG/L
11/5/2019	US-04D	Manganese, Dissolved	13.5	5		UG/L
11/5/2019	US-04D	Mercury, Dissolved	0.2	0.2	U	UG/L
11/5/2019	US-04D	Methane	23	8		UG/L
11/5/2019	US-04D	Methylene Chloride	1.3	1.3	U	UG/L
11/5/2019	US-04D	Nickel, Dissolved	10	10	U	UG/L
11/5/2019	US-04D	Nitrate, Dissolved	0.02	0.02	U	MG/L
11/5/2019	US-04D	Nitrite	0.02	0.02	U	MG/L AS N
11/5/2019	US-04D	Nitrogen, Nitrate	0.02	0.02	U	MG/L AS N
11/5/2019	US-04D	Orthophosphate	0.33	0.02	11.4	MG/L AS P
11/5/2019	US-04D	Selenium, Dissolved	5 10	5	U ^	UG/L
11/5/2019	US-04D US-04D	Silver, Dissolved	1.7	10 1.7	U	UG/L
11/5/2019		Styrene Sulfato			U	UG/L
11/5/2019 11/5/2019	US-04D US-04D	Sulfate Sulfate, Dissolved	49.4 50.6	3	<u> </u>	MG/L MG/L
11/5/2019	US-04D	Sulfide	JU.6	ى 1	U	MG/L MG/L
11/5/2019	US-04D	Tetrachloroethene	2.1	2.1	U	UG/L
11/5/2019	US-04D	Thallium, Dissolved	0.2	0.2	U	UG/L
11/5/2019	US-04D	Toluene	1.6	1.6	U	UG/L
11/5/2019	US-04D	Total Dissolved Solids Field Filtered	309	5	J	MG/L
11/5/2019	US-04D	Total Bissolved Solids Field Fillered  Total Kjeldahl Nitrogen	1	0.15	<u> </u>	MG/L AS N
11/5/2019	US-04D	Total Organic Carbon	1.5	1	<u> </u>	MG/L AS IN
11/5/2019	US-04D	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/5/2019	US-04D	Trichloroethene	1.9	1.9	U	UG/L
11/5/2019	US-04D	Vinyl chloride	2.3	2.3	U	UG/L
11/5/2019	US-04D	Xylenes, Total	3	3	U	UG/L
11/5/2019	US-04D	Zinc, Dissolved	20	20	U	UG/L
11/5/2019	US-05D	1,1,1-Trichloroethane	2.1	2.1	U	UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	US-05D	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/5/2019	US-05D	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/5/2019	US-05D	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/5/2019	US-05D	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/5/2019	US-05D	1,2-Dibromoethane	2	2	U	UG/L
11/5/2019	US-05D	1,2-Dichloroethane	1	1	U	UG/L
11/5/2019	US-05D	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/5/2019	US-05D	Alkalinity, Total	185	10		MG/L
11/5/2019	US-05D	Ammonia	0.29	0.1	F1	MG/L AS N
11/5/2019 11/5/2019	US-05D US-05D	Antimony, Dissolved Arsenic, Dissolved	0.6	0.6 10	U	UG/L UG/L
11/5/2019	US-05D	Barium, Dissolved	200	200	U	UG/L
11/5/2019	US-05D	Benzene	1.6	1.6	U	UG/L
11/5/2019	US-05D	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/5/2019	US-05D	Biochemical Oxygen Demand	2	2	U	MG/L
11/5/2017	US-05D	Boron, Dissolved	524	100	0	UG/L
11/5/2017	US-05D	Cadmium, Dissolved	5	5	U	UG/L
11/5/2019	US-05D	Calcium and Magnesium Hardness, Dissolved	128000	500		UG/L
11/5/2019	US-05D	Calcium, Dissolved	22000	5000		UG/L
11/5/2019	US-05D	Carbon tetrachloride	2	2	U	UG/L
11/5/2019	US-05D	Chloride, Dissolved	2.8	1		MG/L
11/5/2019	US-05D	Chlorobenzene	1.6	1.6	U	UG/L
11/5/2019	US-05D	Chloroethane	2.5	2.5	U	UG/L
11/5/2019	US-05D	Chromium, Dissolved	10	10	Ü	UG/L
11/5/2019	US-05D	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/5/2019	US-05D	Cobalt, Dissolved	10	10	U	UG/L
11/5/2019	US-05D	Copper, Dissolved	10	10	U	UG/L
11/5/2019	US-05D	Dissolved Cyanide	0.011	0.01	* ^ F1	MG/L
11/5/2019	US-05D	Dissolved Cyanide	0.01	0.01	UН	MG/L
11/5/2019	US-05D	Ethane	15	15	U	UG/L
11/5/2019	US-05D	Ethene	13	13	U	UG/L
11/5/2019	US-05D	Ethylbenzene	1.6	1.6	U	UG/L
11/5/2019	US-05D	Fluoride, Dissolved	1.2	0.5		MG/L
11/5/2019	US-05D	Iron, Dissolved	100	100	U	UG/L
11/5/2019	US-05D	Lead, Dissolved	7.5	7.5	U	UG/L
11/5/2019	US-05D	Magnesium, Dissolved	17800	5000		UG/L
11/5/2019	US-05D	Manganese, Dissolved	10.4	5		UG/L
11/5/2019	US-05D	Mercury, Dissolved	0.2	0.2	U	UG/L
11/5/2019	US-05D	Methane	8	8	U	UG/L
11/5/2019	US-05D	Methylene Chloride	1.3	1.3	U	UG/L
11/5/2019	US-05D	Nickel, Dissolved	10	10	U	UG/L
11/5/2019	US-05D	Nitrate, Dissolved	0.02	0.02	UH	MG/L
11/5/2019	US-05D	Nitrite	0.024	0.02	В	MG/L AS N
11/5/2019	US-05D	Nitrogen, Nitrate	0.02	0.02	U	MG/L AS N
11/5/2019	US-05D	Orthophosphate	0.063	0.02		MG/L AS P
11/5/2019	US-05D	Selenium, Dissolved	5	5	U	UG/L
11/5/2019	US-05D	Silver, Dissolved	10	10	U	UG/L
11/5/2019	US-05D	Styrene	1.7	1.7	U	UG/L
11/5/2019	US-05D	Sulfate	67.8	4.5	F1	MG/L
11/5/2019	US-05D	Sulfate, Dissolved	66.7	4.5	F1	MG/L
11/5/2019	US-05D	Sulfide			U	MG/L
11/5/2019	US-05D	Tetrachloroethene	2.1	2.1	U	UG/L
11/5/2019	US-05D	Thallium, Dissolved	0.2	0.2	U	UG/L
11/5/2019	US-05D	Toluene Total Disselved Solids Field Filtered	1.6	1.6	U	UG/L
11/5/2019	US-05D	Total Dissolved Solids Field Filtered	262	5	1	MG/L
11/5/2019	US-05D	Total Kjeldahl Nitrogen	0.42	0.15	11	MG/L AS N
11/5/2019	US-05D	Total Organic Carbon	1.9	1 O	U	MG/L
11/5/2019	US-05D	trans-1,2-Dichloroethene		1.9		UG/L
11/5/2019	US-05D	Trichloroethene	1.9	1.9	U	UG/L
11/5/2019	US-05D US-05D	Vinyl chloride Xylenes, Total	3	2.3	U	UG/L UG/L
11/5/2019						

11/5/2019	Units	Flags	Reporting Limit	Result	Parameter	Sample	Sample Date
11/5/2019	UG/L	U	2.1	2.1	1,1,1-Trichloroethane	US-06D	11/5/2019
11/5/2019	UG/L	_					
11/5/2019	UG/L			2.5	·		
11/5/2019	UG/L		·				
11/5/2019	UG/L						
11/5/2019	UG/L						
11/5/2019	UG/L			· ·			
11/5/2019	UG/L	U					
11/5/2019	MG/L						
11/5/2019	MG/L AS N	11 * ^					
1115/2019	UG/L	-			·		
11/5/2019	UG/L						
11/5/2019	UG/L						
11/5/2019	UG/L						
11/5/2019	UG/L MG/L						
11/5/2019	UG/L	U					
11/5/2019	UG/L	- 11			·		
11/5/2019		U			·		
11/5/2019	UG/L UG/L				<u> </u>		
11/5/2019	UG/L	11					
11/5/2019	MG/L	U	1				
11/5/2019	UG/L	- 11	1 4		<u> </u>		
11/5/2019	UG/L						
11/5/2019   US-06D   Cis-1,2-Dichloroethene   1.8   1.8   U	UG/L	-					
11/5/2019   US-06D   Cobalt, Dissolved   10   10   U	UG/L				· · · · · · · · · · · · · · · · · · ·		
11/5/2019   US-06D   Copper, Dissolved   10   10   U	UG/L						
11/5/2019   US-06D   Dissolved Cyanide   0.01   0.01   U * \	UG/L				·		
11/5/2019   US-06D   Dissolved Cyanide   0.01   0.01   U H   11/5/2019   US-06D   Ethane   15   15   U   11/5/2019   US-06D   Ethane   13   13   U   11/5/2019   US-06D   Ethane   1.6   1.6   U   11/5/2019   US-06D   Ethylenzene   1.6   1.6   U   11/5/2019   US-06D   Fluoride, Dissolved   1.2   0.5   U   11/5/2019   US-06D   Fluoride, Dissolved   278   100   U   11/5/2019   US-06D   Lead, Dissolved   7.5   7.5   U   U   11/5/2019   US-06D   Magnesium, Dissolved   18200   5000   U   11/5/2019   US-06D   Manganese, Dissolved   18200   5000   U   11/5/2019   US-06D   Manganese, Dissolved   16.2   5   U   U   11/5/2019   US-06D   Mercury, Dissolved   0.2   0.2   U   U   11/5/2019   US-06D   Mercury, Dissolved   0.2   0.2   U   U   11/5/2019   US-06D   Methylene   8   8   U   U   U   U   U   U   U   U	MG/L						
11/5/2019	MG/L				,		
11/5/2019	UG/L				·		
11/5/2019	UG/L	_					
11/5/2019   US-06D   Fluoride, Dissolved   1.2   0.5	UG/L						
11/5/2019         US-06D         Iron, Dissolved         278         100           11/5/2019         US-06D         Lead, Dissolved         7.5         7.5         U           11/5/2019         US-06D         Magnesium, Dissolved         18200         5000           11/5/2019         US-06D         Manganese, Dissolved         16.2         5           11/5/2019         US-06D         Mercury, Dissolved         0.2         0.2         U           11/5/2019         US-06D         Methane         8         8         U           11/5/2019         US-06D         Methylene Chloride         1.3         1.3         U           11/5/2019         US-06D         Nickel, Dissolved         10         10         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Orthophosphate         0.14         0.02         I           11/5/2019         US-06D         Selenium, Dissolved         5<	MG/L		0.5	1.2			
11/5/2019         US-06D         Lead, Dissolved         7.5         7.5         U           11/5/2019         US-06D         Magnesium, Dissolved         18200         5000           11/5/2019         US-06D         Manganese, Dissolved         16.2         5           11/5/2019         US-06D         Mercury, Dissolved         0.2         0.2         U           11/5/2019         US-06D         Methane         8         8         U           11/5/2019         US-06D         Methylene Chloride         1.3         1.3         U           11/5/2019         US-06D         Mickel, Dissolved         10         10         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U           11/5/2019         US-06D         Orthophosphate         0.14         0.02         U           11/5/2019         US-06D         Silver, Dissolved         5         5         U ^           11/5/2019         US-06D         Silfate	UG/L		100	278			
11/5/2019         US-06D         Manganese, Dissolved         16.2         5           11/5/2019         US-06D         Mercury, Dissolved         0.2         0.2         U           11/5/2019         US-06D         Methane         8         8         U           11/5/2019         US-06D         Methylene Chloride         1.3         1.3         U           11/5/2019         US-06D         Nickel, Dissolved         10         10         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrite         0.02         0.02         U         N           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Orthophosphate         0.14         0.02         I         N           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^         I           11/5/2019         US-06D         Silver, Dissolved         10         10         U           11/5/2019         US-06D         Sulfate, Dissolved         110         4.5           11/5/2019<	UG/L	U	7.5	7.5	Lead, Dissolved	US-06D	
11/5/2019         US-06D         Mercury, Dissolved         0.2         0.2         U           11/5/2019         US-06D         Methane         8         8         U           11/5/2019         US-06D         Methylene Chloride         1.3         1.3         U           11/5/2019         US-06D         Nickel, Dissolved         10         10         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Orthophosphate         0.14         0.02         U         N           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^         V           11/5/2019         US-06D         Silver, Dissolved         10         10         U         U         V           11/5/2019         US-06D         Sulfate         11.7         1.7         U         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V <td>UG/L</td> <td></td> <td>5000</td> <td>18200</td> <td>Magnesium, Dissolved</td> <td>US-06D</td> <td>11/5/2019</td>	UG/L		5000	18200	Magnesium, Dissolved	US-06D	11/5/2019
11/5/2019         US-06D         Methane         8         8         U           11/5/2019         US-06D         Methylene Chloride         1.3         1.3         U           11/5/2019         US-06D         Nickel, Dissolved         10         10         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Orthophosphate         0.14         0.02         U         N           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^         V           11/5/2019         US-06D         Silver, Dissolved         10         10         U         V           11/5/2019         US-06D         Sulfate         111         4.5         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V <td>UG/L</td> <td></td> <td>5</td> <td>16.2</td> <td>Manganese, Dissolved</td> <td>US-06D</td> <td></td>	UG/L		5	16.2	Manganese, Dissolved	US-06D	
11/5/2019         US-06D         Methylene Chloride         1.3         1.3         U           11/5/2019         US-06D         Nickel, Dissolved         10         10         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrite         0.02         0.02         U         N           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Orthophosphate         0.14         0.02         U         N           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^         V           11/5/2019         US-06D         Silver, Dissolved         10         10         U         U         V           11/5/2019         US-06D         Sulfate         1.7         1.7         U         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V	UG/L	U	0.2	0.2	Mercury, Dissolved	US-06D	11/5/2019
11/5/2019         US-06D         Nickel, Dissolved         10         10         U           11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrite         0.02         0.02         U         N           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Orthophosphate         0.14         0.02         U         N           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^         V           11/5/2019         US-06D         Silver, Dissolved         10         10         U         U         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V	UG/L	U			Methane		
11/5/2019         US-06D         Nitrate, Dissolved         0.02         0.02         U           11/5/2019         US-06D         Nitrite         0.02         0.02         U         N           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Orthophosphate         0.14         0.02         U         N           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^         V           11/5/2019         US-06D         Silver, Dissolved         10         10         U         U         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V         V	UG/L	U	1.3	1.3	Methylene Chloride	US-06D	11/5/2019
11/5/2019         US-06D         Nitrite         0.02         0.02         U N           11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Orthophosphate         0.14         0.02         I           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^           11/5/2019         US-06D         Silver, Dissolved         10         10         U           11/5/2019         US-06D         Styrene         1.7         1.7         U           11/5/2019         US-06D         Sulfate         111         4.5           11/5/2019         US-06D         Sulfate, Dissolved         110         4.5           11/5/2019         US-06D         Sulfide         1         1         U           11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         0.2	UG/L	U	10		Nickel, Dissolved	US-06D	11/5/2019
11/5/2019         US-06D         Nitrogen, Nitrate         0.02         0.02         U         N           11/5/2019         US-06D         Orthophosphate         0.14         0.02         I/           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^           11/5/2019         US-06D         Silver, Dissolved         10         10         U           11/5/2019         US-06D         Styrene         1.7         1.7         U           11/5/2019         US-06D         Sulfate         111         4.5           11/5/2019         US-06D         Sulfate, Dissolved         110         4.5           11/5/2019         US-06D         Sulfide         1         1         U           11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U	MG/L	U	0.02	0.02	· · · · · · · · · · · · · · · · · · ·	US-06D	
11/5/2019         US-06D         Orthophosphate         0.14         0.02         I           11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^           11/5/2019         US-06D         Silver, Dissolved         10         10         U           11/5/2019         US-06D         Styrene         1.7         1.7         U           11/5/2019         US-06D         Sulfate         111         4.5           11/5/2019         US-06D         Sulfate, Dissolved         110         4.5           11/5/2019         US-06D         Sulfide         1         1         U           11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U	MG/L AS N						
11/5/2019         US-06D         Selenium, Dissolved         5         5         U ^           11/5/2019         US-06D         Silver, Dissolved         10         10         U           11/5/2019         US-06D         Styrene         1.7         1.7         U           11/5/2019         US-06D         Sulfate         111         4.5         111         4.5           11/5/2019         US-06D         Sulfate, Dissolved         110         4.5         11         1         U           11/5/2019         US-06D         Sulfide         1         1         1         U         11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U         U         11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U         U	MG/L AS N	U			-		
11/5/2019         US-06D         Silver, Dissolved         10         10         U           11/5/2019         US-06D         Styrene         1.7         1.7         U           11/5/2019         US-06D         Sulfate         111         4.5           11/5/2019         US-06D         Sulfate, Dissolved         110         4.5           11/5/2019         US-06D         Sulfide         1         1         U           11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U	MG/L AS P						
11/5/2019         US-06D         Styrene         1.7         1.7         U           11/5/2019         US-06D         Sulfate         111         4.5           11/5/2019         US-06D         Sulfate, Dissolved         110         4.5           11/5/2019         US-06D         Sulfide         1         1         U           11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U	UG/L						
11/5/2019         US-06D         Sulfate         111         4.5           11/5/2019         US-06D         Sulfate, Dissolved         110         4.5           11/5/2019         US-06D         Sulfide         1         1         U           11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U	UG/L						
11/5/2019         US-06D         Sulfate, Dissolved         110         4.5           11/5/2019         US-06D         Sulfide         1         1         U           11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U	UG/L	U					
11/5/2019         US-06D         Sulfide         1         1         U           11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U	MG/L						
11/5/2019         US-06D         Tetrachloroethene         2.1         2.1         U           11/5/2019         US-06D         Thallium, Dissolved         0.2         0.2         U	MG/L		4.5	110			
11/5/2019 US-06D Thallium, Dissolved 0.2 0.2 U	MG/L		1	1			
	UG/L						
I 11/5/2019 I US-06D I Toluene I 1.6 I 1.6 I II I	UG/L				·		
	UG/L	U	1.6	1.6		US-06D	11/5/2019
11/5/2019 US-06D Total Dissolved Solids Field Filtered 308 5	MG/L			308			
	MG/L AS N		0.15	1			
11/5/2019 US-06D Total Organic Carbon 1.5 1	MG/L		1				
11/5/2019 US-06D trans-1,2-Dichloroethene 1.9 1.9 U	UG/L						
11/5/2019 US-06D Trichloroethene 1.9 1.9 U	UG/L						
11/5/2019         US-06D         Vinyl chloride         2.3         2.3         U           11/5/2019         US-06D         Xylenes, Total         3         3         U	UG/L UG/L						

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	US-06D	Zinc, Dissolved	20	20	U	UG/L
11/5/2019	W-03D	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/5/2019	W-03D	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/5/2019	W-03D	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/5/2019	W-03D	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/5/2019	W-03D	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/5/2019	W-03D	1,2-Dibromoethane	2	2	U	UG/L
11/5/2019	W-03D	1,2-Dichloroethane	1	1	U	UG/L
11/5/2019	W-03D	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/5/2019	W-03D	Alkalinity, Total	227	10		MG/L
11/5/2019	W-03D	Ammonia	0.27	0.1	11 * 4	MG/L AS N
11/5/2019	W-03D	Antimony, Dissolved	0.6	0.6	U * ^	UG/L
11/5/2019	W-03D	Arsenic, Dissolved	10	10	U	UG/L
11/5/2019	W-03D	Barium, Dissolved	200	200	U	UG/L
11/5/2019	W-03D	Benzene	1.6	1.6	U	UG/L
11/5/2019	W-03D	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/5/2019	W-03D	Biochemical Oxygen Demand	2	2	U	MG/L
11/5/2019	W-03D	Boron, Dissolved	421	100	<b>.</b>	UG/L
11/5/2019	W-03D	Cadmium, Dissolved	5	5	U	UG/L
11/5/2019	W-03D	Calcium and Magnesium Hardness, Dissolved	201000	500		UG/L
11/5/2019	W-03D	Calcium, Dissolved	35700	5000		UG/L
11/5/2019	W-03D	Carbon tetrachloride	2	2	U	UG/L
11/5/2019	W-03D	Chloride, Dissolved	55	1 (		MG/L
11/5/2019	W-03D	Chlorobenzene	1.6	1.6	U	UG/L
11/5/2019	W-03D	Chloroethane	2.5	2.5	U	UG/L
11/5/2019	W-03D	Chromium, Dissolved	10	10	U	UG/L
11/5/2019	W-03D	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/5/2019	W-03D	Cobalt, Dissolved	10	10	U	UG/L
11/5/2019	W-03D	Copper, Dissolved	10	10	U	UG/L
11/5/2019	W-03D	Dissolved Cyanide	0.01	0.01	U *	MG/L
11/5/2019	W-03D	Ethane	15	15	U	UG/L
11/5/2019	W-03D W-03D	Ethene	13	13	U	UG/L
11/5/2019	W-03D W-03D	Ethylbenzene Fluoride, Dissolved	1.6 0.65	1.6	U	UG/L
11/5/2019	W-03D	•	100	0.5 100	11	MG/L UG/L
11/5/2019 11/5/2019	W-03D	Iron, Dissolved Lead, Dissolved	7.5	7.5	U	UG/L UG/L
11/5/2019	W-03D	Magnesium, Dissolved	27200	5000	U	UG/L
11/5/2019	W-03D	Manganese, Dissolved	18.5	5		UG/L
11/5/2019	W-03D	Mercury, Dissolved	0.2	0.2	U	UG/L
11/5/2019	W-03D	Methane	8	8	U	UG/L
11/5/2019	W-03D	Methylene Chloride	1.3	1.3	U	UG/L
11/5/2019	W-03D	Nickel, Dissolved	1.3	1.3	U	UG/L
11/5/2019	W-03D	Nitrate, Dissolved	0.02	0.02	U	MG/L
11/5/2019	W-03D	Nitrite	0.02	0.02	U	MG/L AS N
11/5/2019	W-03D	Nitrogen, Nitrate	0.02	0.02	J	MG/L AS N
11/5/2017	W-03D	Orthophosphate	1.1	0.02		MG/L AS P
11/5/2017	W-03D	Selenium, Dissolved	5	5	UΛ	UG/L
11/5/2019	W-03D	Silver, Dissolved	10	10	U	UG/L
11/5/2019	W-03D	Styrene	1.7	1.7	U	UG/L
11/5/2019	W-03D	Sulfate	57.1	3		MG/L
11/5/2019	W-03D	Sulfate, Dissolved	54.2	3		MG/L
11/5/2019	W-03D	Sulfide	1	1	U	MG/L
11/5/2019	W-03D	Tetrachloroethene	2.1	2.1	Ü	UG/L
11/5/2019	W-03D	Thallium, Dissolved	0.2	0.2	Ü	UG/L
11/5/2019	W-03D	Toluene	1.6	1.6	Ü	UG/L
11/5/2019	W-03D	Total Dissolved Solids Field Filtered	627	5		MG/L
11/5/2019	W-03D	Total Kjeldahl Nitrogen	0.44	0.15		MG/L AS N
11/5/2019	W-03D	Total Organic Carbon	1.4	1		MG/L
11/5/2019	W-03D	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/5/2019	W-03D	Trichloroethene	1.9	1.9	Ü	UG/L
11/5/2019	W-03D	Vinyl chloride	2.3	2.3	Ü	UG/L
11/5/2019	W-03D	Xylenes, Total	3	3	U	UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	W-03D	Zinc, Dissolved	20	20	U	UG/L
11/5/2019	W-08D	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/5/2019	W-08D	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/5/2019	W-08D	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/5/2019	W-08D	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/5/2019	W-08D	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/5/2019	W-08D	1,2-Dibromoethane	2	2	U	UG/L
11/5/2019	W-08D	1,2-Dichloroethane	1.7	1.7	U	UG/L
11/5/2019	W-08D W-08D	1,2-Dichloropropane	1.7 382	1.7 10	U	UG/L MG/L
11/5/2019 11/5/2019	W-08D	Alkalinity, Total Ammonia	0.48	0.1		MG/L MG/L AS N
11/5/2019	W-08D	Antimonid  Antimony, Dissolved	0.46	0.6	U* ^	UG/L
11/5/2019	W-08D	Ariminory, Dissolved  Arsenic, Dissolved	10	10	U	UG/L
11/5/2019	W-08D	Barium, Dissolved	200	200	U	UG/L
11/5/2017	W-08D	Benzene	1.6	1.6	U	UG/L
11/5/2019	W-08D	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/5/2019	W-08D	Biochemical Oxygen Demand	2	2	U	MG/L
11/5/2019	W-08D	Boron, Dissolved	100	100	Ü	UG/L
11/5/2019	W-08D	Cadmium, Dissolved	5	5	Ü	UG/L
11/5/2019	W-08D	Calcium and Magnesium Hardness, Dissolved	464000	500		UG/L
11/5/2019	W-08D	Calcium, Dissolved	107000	5000		UG/L
11/5/2019	W-08D	Carbon tetrachloride	2	2	U	UG/L
11/5/2019	W-08D	Chloride, Dissolved	121	1		MG/L
11/5/2019	W-08D	Chlorobenzene	1.6	1.6	U	UG/L
11/5/2019	W-08D	Chloroethane	2.5	2.5	U	UG/L
11/5/2019	W-08D	Chromium, Dissolved	10	10	U	UG/L
11/5/2019	W-08D	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/5/2019	W-08D	Cobalt, Dissolved	10	10	U	UG/L
11/5/2019	W-08D	Copper, Dissolved	10	10	U	UG/L
11/5/2019	W-08D	Dissolved Cyanide	0.017	0.01	* ^	MG/L
11/5/2019	W-08D	Dissolved Cyanide	0.01	0.01	UΗ	MG/L
11/5/2019	W-08D	Ethane	17	17	U	UG/L
11/5/2019	W-08D	Ethene	17	17	U	UG/L
11/5/2019	W-08D	Ethylbenzene	1.6	1.6	U	UG/L
11/5/2019	W-08D	Fluoride, Dissolved	0.5	0.5	U	MG/L
11/5/2019	W-08D	Iron, Dissolved	3990	100		UG/L
11/5/2019	W-08D	Lead, Dissolved	7.5	7.5	U	UG/L
11/5/2019	W-08D	Magnesium, Dissolved	48100	5000		UG/L
11/5/2019	W-08D	Manganese, Dissolved	194	5		UG/L
11/5/2019	W-08D	Mercury, Dissolved	0.2	0.2	U	UG/L
11/5/2019	W-08D	Methane	1400	11		UG/L
11/5/2019	W-08D	Methylene Chloride	1.3	1.3	U	UG/L
11/5/2019	W-08D	Nickel, Dissolved	10	10	U	UG/L
11/5/2019	W-08D W-08D	Nitrate, Dissolved Nitrite	0.02	0.02 0.02	U	MG/L
11/5/2019 11/5/2019	W-08D		0.02	0.02	U	MG/L AS N
11/5/2019	W-08D	Nitrogen, Nitrate Orthophosphate	0.039	0.02	U	MG/L AS N MG/L AS P
11/5/2019	W-08D	Selenium, Dissolved	5	5	U ^	UG/L
11/5/2019	W-08D	Silver, Dissolved	10	10	U	UG/L
11/5/2019	W-08D	Styrene	1.7	1.7	U	UG/L
11/5/2019	W-08D	Sulfate	1.7	1.5	U	MG/L
11/5/2019	W-08D	Sulfate, Dissolved	1.5	1.5	U	MG/L MG/L
11/5/2019	W-08D	Sulfide	1.5	1.5	U	MG/L MG/L
11/5/2019	W-08D	Tetrachloroethene	2.1	2.1	U	UG/L
11/5/2019	W-08D	Thallium, Dissolved	0.2	0.2	U	UG/L
11/5/2019	W-08D	Toluene	1.6	1.6	U	UG/L
11/5/2019	W-08D	Total Dissolved Solids Field Filtered	546	5		MG/L
11/5/2019	W-08D	Total Kjeldahl Nitrogen	0.96	0.15	1	MG/L AS N
11/5/2019	W-08D	Total Organic Carbon	5.2	1		MG/L
11/5/2019	W-08D	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/5/2019	W-08D	Trichloroethene	1.9	1.9	U	UG/L
11/5/2019	W-08D	Vinyl chloride	2.3	2.3	Ü	UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	W-08D	Xylenes, Total	3	3	U	UG/L
11/5/2019	W-08D	Zinc, Dissolved	20	20	U	UG/L
11/6/2019	G-102	1,1,1-Trichloroethane	2.1	2.1	U *	UG/L
11/6/2019	G-102	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/6/2019	G-102	1,1-Dichloroethene	2.5	2.5	U *	UG/L
11/6/2019	G-102	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/6/2019	G-102	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/6/2019	G-102	1,2-Dibromoethane	2	2	U	UG/L
11/6/2019	G-102	1,2-Dichloroethane	1	1	U	UG/L
11/6/2019	G-102	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/6/2019	G-102	Antimony, Dissolved	0.6	0.6	U	UG/L
11/6/2019	G-102	Arsenic, Dissolved	10	10	U	UG/L
11/6/2019	G-102	Barium, Dissolved	303	200		UG/L
11/6/2019	G-102	Benzene	1.6	1.6	U	UG/L
11/6/2019	G-102	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/6/2019	G-102	Boron, Dissolved	243	100		UG/L
11/6/2019	G-102	Cadmium, Dissolved	5	5	U	UG/L
11/6/2019	G-102	Calcium and Magnesium Hardness, Dissolved	658000	500		UG/L
11/6/2019	G-102	Calcium, Dissolved	158000	5000		UG/L
11/6/2019	G-102	Carbon tetrachloride	2	2	U	UG/L
11/6/2019	G-102	Chloride, Dissolved	220	3.4		MG/L
11/6/2019	G-102	Chlorobenzene	1.6	1.6	U	UG/L
11/6/2019	G-102	Chromium, Dissolved	10	10	U	UG/L
11/6/2019	G-102	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/6/2019	G-102	Cobalt, Dissolved	10	10	U	UG/L
11/6/2019	G-102	Copper, Dissolved	10	10	U	UG/L
11/6/2019	G-102	Dissolved Cyanide	0.01	0.01	U *	MG/L
11/6/2019	G-102	Ethylbenzene	1.6	1.6	U	UG/L
11/6/2019	G-102	Fluoride, Dissolved	0.5	0.5	U	MG/L
11/6/2019	G-102	Iron, Dissolved	6050	100		UG/L
11/6/2019	G-102	Lead, Dissolved	7.5	7.5	U	UG/L
11/6/2019	G-102	Magnesium, Dissolved	64200	5000		UG/L
11/6/2019	G-102	Manganese, Dissolved	95.8	5		UG/L
11/6/2019	G-102	Mercury, Dissolved	0.2	0.2	U	UG/L
11/6/2019	G-102	Methylene Chloride	1.3	1.3	U	UG/L
11/6/2019	G-102	Nickel, Dissolved	10	10	U	UG/L
11/6/2019	G-102	Nitrate, Dissolved	0.02	0.02	U	MG/L
11/6/2019	G-102	Selenium, Dissolved	5	5	U	UG/L
11/6/2019	G-102	Silver, Dissolved	10	10	U	UG/L
11/6/2019	G-102	Styrene	1.7	1.7	U	UG/L
11/6/2019	G-102	Sulfate, Dissolved	76.1	3		MG/L
11/6/2019	G-102	Tetrachloroethene	2.1	2.1	U	UG/L
11/6/2019	G-102	Thallium, Dissolved	0.2	0.2	U	UG/L
11/6/2019	G-102	Toluene	1.6	1.6	U	UG/L
11/6/2019	G-102	Total Dissolved Solids Field Filtered	863	5		MG/L
11/6/2019	G-102	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/6/2019	G-102	Trichloroethene	1.9	1.9	Ü	UG/L
11/6/2019	G-102	Vinyl chloride	2.3	2.3	U*	UG/L
11/6/2019	G-102	Xylenes, Total	3	3	Ü	UG/L
11/6/2019	G-102	Zinc, Dissolved	20	20	Ü	UG/L
11/6/2019	PZ-04U	1,1,1-Trichloroethane	2.1	2.1	U*	UG/L
11/6/2019	PZ-04U	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/6/2019	PZ-04U	1,1-Dichloroethene	2.5	2.5	U*	UG/L
11/6/2019	PZ-04U	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/6/2019	PZ-04U	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/6/2019	PZ-04U	1,2-Dibromoethane	2	2	U	UG/L
11/6/2019	PZ-04U	1,2-Dichloroethane	1	1	U	UG/L
11/6/2019	PZ-04U	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/6/2019	PZ-04U	Antimony, Dissolved	0.6	0.6	U	UG/L
11/6/2019	PZ-04U	Arimony, Dissolved  Arsenic, Dissolved	10	10	U	UG/L
	PZ-04U	Barium, Dissolved	200	200	U	UG/L
11/6/2019						

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/6/2019	PZ-04U	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/6/2019	PZ-04U	Boron, Dissolved	100	100	U	UG/L
11/6/2019	PZ-04U	Cadmium, Dissolved	5	5	U	UG/L
11/6/2019	PZ-04U	Calcium and Magnesium Hardness, Dissolved	442000	500		UG/L
11/6/2019	PZ-04U	Calcium, Dissolved	98400	5000		UG/L
11/6/2019	PZ-04U	Carbon tetrachloride	2	2	U	UG/L
11/6/2019	PZ-04U	Chloride, Dissolved	146	1.7		MG/L
11/6/2019	PZ-04U	Chlorobenzene	1.6	1.6	U	UG/L
11/6/2019	PZ-04U	Chromium, Dissolved	10	10	U	UG/L
11/6/2019	PZ-04U	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/6/2019	PZ-04U	Cobalt, Dissolved	10	10	U	UG/L
11/6/2019	PZ-04U	Copper, Dissolved	10	10	U	UG/L
11/6/2019	PZ-04U	Dissolved Cyanide	0.01	0.01	U*	MG/L
11/6/2019	PZ-04U	Ethylbenzene	1.6	1.6	U	UG/L
11/6/2019	PZ-04U	Fluoride, Dissolved	0.5	0.5	Ü	MG/L
11/6/2019	PZ-04U	Iron, Dissolved	2250	100		UG/L
11/6/2019	PZ-04U	Lead, Dissolved	7.5	7.5	U	UG/L
11/6/2019	PZ-04U	Magnesium, Dissolved	47700	5000	Ŭ	UG/L
11/6/2019	PZ-04U	Manganese, Dissolved	194	5		UG/L
11/6/2019	PZ-04U	Mercury, Dissolved	0.2	0.2	U	UG/L
11/6/2019	PZ-04U	Mercury, Dissolved  Methylene Chloride	1.3	1.3	U	UG/L
11/6/2019	PZ-04U	Nickel, Dissolved	1.3	1.3	U	UG/L
11/6/2019	PZ-04U	Nitrate, Dissolved	0.02	0.02	UH	MG/L
11/6/2019	PZ-04U	Selenium, Dissolved	5	5	U	UG/L
11/6/2019	PZ-04U	Silver, Dissolved	10	10	U	UG/L
11/6/2019	PZ-04U	Styrene	1.7	1.7	U	UG/L
11/6/2019	PZ-04U	Sulfate, Dissolved	2.3	1.5		MG/L
11/6/2019	PZ-04U	Tetrachloroethene	2.1	2.1	U	UG/L
11/6/2019	PZ-04U	Thallium, Dissolved	0.2	0.2	U	UG/L
11/6/2019	PZ-04U	Toluene	1.6	1.6	U	UG/L
11/6/2019	PZ-04U	Total Dissolved Solids Field Filtered	474	5		MG/L
11/6/2019	PZ-04U	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/6/2019	PZ-04U	Trichloroethene	1.9	1.9	U	UG/L
11/6/2019	PZ-04U	Vinyl chloride	2.3	2.3	U *	UG/L
11/6/2019	PZ-04U	Xylenes, Total	3	3	U	UG/L
11/6/2019	PZ-04U	Zinc, Dissolved	20	20	U	UG/L
11/6/2019	US-04S	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/6/2019	US-04S	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/6/2019	US-04S	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/6/2019	US-04S	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/6/2019	US-04S	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/6/2019	US-04S	1,2-Dibromoethane	2	2	U	UG/L
11/6/2019	US-04S	1,2-Dichloroethane	1	 1	Ü	UG/L
11/6/2019	US-04S	1,2-Dichloropropane	1.7	1.7	Ü	UG/L
11/6/2019	US-04S	Antimony, Dissolved	0.6	0.6	Ü	UG/L
11/6/2019	US-04S	Arsenic, Dissolved	10	10	U	UG/L
11/6/2019	US-04S	Barium, Dissolved	294	200		UG/L
11/6/2019	US-04S	Benzene	1.6	1.6	U	UG/L
11/6/2019	US-04S	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/6/2019	US-04S	Boron, Dissolved	185	100	U	UG/L
11/6/2019	US-04S	Cadmium, Dissolved	5	5	U	UG/L
					U	
11/6/2019	US-04S	Calcium and Magnesium Hardness, Dissolved	685000	500		UG/L
11/6/2019	US-04S	Calcium, Dissolved	164000	5000	<u> </u>	UG/L
11/6/2019	US-04S	Carbon tetrachloride	2	2	U	UG/L
11/6/2019	US-04S	Chloride, Dissolved	242	1.7	L	MG/L
11/6/2019	US-04S	Chlorobenzene	1.6	1.6	U	UG/L
11/6/2019	US-04S	Chromium, Dissolved	10	10	U	UG/L
11/6/2019	US-04S	cis-1,2-Dichloroethene	34	1.8		UG/L
11/6/2019	US-04S	Cobalt, Dissolved	10	10	U	UG/L
11/6/2019	US-04S	Copper, Dissolved	10	10	U	UG/L
11/6/2019	US-04S	Dissolved Cyanide	0.01	0.01	U * F1	MG/L
11/6/2019	US-04S	Ethylbenzene	1.6	1.6	U	UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/6/2019	US-04S	Fluoride, Dissolved	0.5	0.5	U	MG/L
11/6/2019	US-04S	Iron, Dissolved	4320	100		UG/L
11/6/2019	US-04S	Lead, Dissolved	7.5	7.5	U	UG/L
11/6/2019	US-04S	Magnesium, Dissolved	67100	5000		UG/L
11/6/2019	US-04S	Manganese, Dissolved	106	5		UG/L
11/6/2019	US-04S	Mercury, Dissolved	0.2	0.2	U	UG/L
11/6/2019	US-04S	Methylene Chloride	3	1.3	B *	UG/L
11/6/2019	US-04S	Nickel, Dissolved	10	10	U	UG/L
11/6/2019	US-04S	Nitrate, Dissolved	0.02	0.02	U	MG/L
11/6/2019	US-04S	Selenium, Dissolved	5	5	U	UG/L
11/6/2019	US-04S	Silver, Dissolved	10	10	U	UG/L
11/6/2019	US-04S	Styrene	1.7	1.7	U	UG/L
11/6/2019	US-04S	Sulfate, Dissolved	151	7.5	L	MG/L
11/6/2019	US-04S	Tetrachloroethene	2.1	2.1	U	UG/L
11/6/2019	US-04S	Thallium, Dissolved	0.2	0.2	U	UG/L
11/6/2019	US-04S	Toluene	1.6	1.6	U	UG/L
11/6/2019	US-04S	Total Dissolved Solids Field Filtered	985	5		MG/L
11/6/2019	US-04S	trans-1,2-Dichloroethene	5.5	1.9		UG/L
11/6/2019	US-04S	Trichloroethene	1.9	1.9	U	UG/L
11/6/2019	US-04S	Vinyl chloride	2.3	2.3	U	UG/L
11/6/2019	US-04S	Xylenes, Total	3	3	U	UG/L
11/6/2019	US-04S	Zinc, Dissolved	20	20	U	UG/L
11/6/2019	US-06S	1,1,1-Trichloroethane	2.1	2.1	U *	UG/L
11/6/2019	US-06S	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/6/2019	US-06S	1,1-Dichloroethene	2.5	2.5	U *	UG/L
11/6/2019	US-06S	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/6/2019	US-06S	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/6/2019	US-06S	1,2-Dibromoethane	2	2	U	UG/L
11/6/2019	US-06S	1,2-Dichloroethane	1	1	U	UG/L
11/6/2019	US-06S	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/6/2019	US-06S	Antimony, Dissolved	0.6	0.6	U	UG/L
11/6/2019	US-06S	Arsenic, Dissolved	10	10	U	UG/L
11/6/2019	US-06S	Barium, Dissolved	200	200	U	UG/L
11/6/2019	US-06S	Benzene	1.6	1.6	U	UG/L
11/6/2019	US-06S	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/6/2019	US-06S	Boron, Dissolved	100	100	U	UG/L
11/6/2019	US-06S	Cadmium, Dissolved	5	5	U	UG/L
11/6/2019	US-06S	Calcium and Magnesium Hardness, Dissolved	460000	500		UG/L
11/6/2019	US-06S	Calcium, Dissolved	107000	5000		UG/L
11/6/2019	US-06S	Carbon tetrachloride	2	2	U	UG/L
11/6/2019	US-06S	Chloride, Dissolved	129	1	l	MG/L
11/6/2019	US-06S	Chlorobenzene	1.6	1.6	U	UG/L
11/6/2019	US-06S	Chromium, Dissolved	10	10	U	UG/L
11/6/2019	US-06S	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/6/2019	US-06S	Cobalt, Dissolved	10	10	U	UG/L
11/6/2019	US-06S	Copper, Dissolved	10	10	U	UG/L
11/6/2019	US-06S	Dissolved Cyanide	0.01	0.01	U*	MG/L
11/6/2019	US-06S	Ethylbenzene	1.6	1.6	U	UG/L
11/6/2019	US-06S	Fluoride, Dissolved	0.5	0.5	U	MG/L
11/6/2019	US-06S	Iron, Dissolved	4110	100	1.	UG/L
11/6/2019	US-06S	Lead, Dissolved	7.5	7.5	U	UG/L
11/6/2019	US-06S	Magnesium, Dissolved	46800	5000		UG/L
11/6/2019	US-06S	Manganese, Dissolved	90.8	5	ļ.,	UG/L
11/6/2019	US-06S	Mercury, Dissolved	0.2	0.2	U	UG/L
11/6/2019	US-06S	Methylene Chloride	1.3	1.3	U	UG/L
11/6/2019	US-06S	Nickel, Dissolved	10	10	U	UG/L
11/6/2019	US-06S	Nitrate, Dissolved	0.039	0.02		MG/L
11/6/2019	US-06S	Selenium, Dissolved	5	5	U	UG/L
11/6/2019	US-06S	Silver, Dissolved	10	10	U	UG/L
11/6/2019	US-06S	Styrene	1.7	1.7	U	UG/L
11/6/2019	US-06S	Sulfate, Dissolved	1.5	1.5	U F1	MG/L
11/6/2019	US-06S	Tetrachloroethene	2.1	2.1	U	UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/6/2019	US-06S	Thallium, Dissolved	0.2	0.2	U	UG/L
11/6/2019	US-06S	Toluene	1.6	1.6	U	UG/L
11/6/2019	US-06S	Total Dissolved Solids Field Filtered	566	5		MG/L
11/6/2019	US-06S	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/6/2019	US-06S	Trichloroethene	1.9	1.9	U	UG/L
11/6/2019	US-06S	Vinyl chloride	2.3	2.3	U *	UG/L
11/6/2019	US-06S	Xylenes, Total	3	3	U	UG/L
11/6/2019	US-06S	Zinc, Dissolved	20	20	U	UG/L
11/6/2019	W-06S	1,1,1-Trichloroethane	3.3	3.3	U *	UG/L
11/6/2019	W-06S	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/6/2019	W-06S	1,1-Dichloroethene	2.5	2.5	U *	UG/L
11/6/2019	W-06S	1,2,4-Trichlorobenzene	1.6	1.6	U	UG/L
11/6/2019	W-06S	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/6/2019	W-06S	1,2-Dibromoethane	2.9	2.9	U	UG/L
11/6/2019	W-06S	1,2-Dichloroethane	1	1	U	UG/L
11/6/2019	W-06S	1,2-Dichloropropane	2.9	2.9	U	UG/L
11/6/2019	W-06S	Antimony, Dissolved	0.61	0.6		UG/L
11/6/2019	W-06S	Arsenic, Dissolved	10	10	U	UG/L
11/6/2019	W-06S	Barium, Dissolved	200	200	U	UG/L
11/6/2019	W-06S	Benzene	1.6	1.6	U	UG/L
11/6/2019	W-06S	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/6/2019	W-06S	Boron, Dissolved	615	100		UG/L
11/6/2019	W-06S	Cadmium, Dissolved	5	5	U	UG/L
11/6/2019	W-06S	Calcium and Magnesium Hardness, Dissolved	1320000	500		UG/L
11/6/2019	W-06S	Calcium, Dissolved	318000	5000		UG/L
11/6/2019	W-06S	Carbon tetrachloride	2	2	U	UG/L
11/6/2019	W-06S	Chloride, Dissolved	255	3.4		MG/L
11/6/2019	W-06S	Chlorobenzene	3	3	U	UG/L
11/6/2019	W-06S	Chromium, Dissolved	10	10	Ü	UG/L
11/6/2019	W-06S	cis-1,2-Dichloroethene	4.6	3.2		UG/L
11/6/2019	W-06S	Cobalt, Dissolved	10	10	U	UG/L
11/6/2019	W-06S	Copper, Dissolved	10	10	Ü	UG/L
11/6/2019	W-06S	Dissolved Cyanide	0.01	0.01	U*	MG/L
11/6/2019	W-06S	Ethylbenzene	3	3	U	UG/L
11/6/2019	W-06S	Fluoride, Dissolved	0.5	0.5	U	MG/L
11/6/2019	W-06S	Iron, Dissolved	13700	100		UG/L
11/6/2019	W-06S	Lead, Dissolved	7.5	7.5	U	UG/L
11/6/2019	W-06S	Magnesium, Dissolved	127000	5000		UG/L
11/6/2019	W-06S	Magnesion, Dissolved  Manganese, Dissolved	593	5	1	UG/L
11/6/2019	W-06S	Mercury, Dissolved	0.2	0.2	U	UG/L
11/6/2019	W-06S	Methylene Chloride	1.8	1.8	U	UG/L
11/6/2019	W-06S	Nickel, Dissolved	10.2	1.0	U	UG/L
11/6/2019	W-06S	Nitrate, Dissolved	0.02	0.02	UΗ	MG/L
11/6/2019	W-06S	Selenium, Dissolved	5	5	U	UG/L
11/6/2019	W-06S	Silver, Dissolved	10	<u>5</u> 10	U	UG/L
11/6/2019	W-06S	Styrene	2.9	2.9	U	UG/L
11/6/2019	W-06S	Sulfate, Dissolved	1.5	1.5	U	MG/L
		Tetrachloroethene	2.1		U	
11/6/2019	W-06S W-06S	Thallium, Dissolved	0.2	2.1 0.2	U	UG/L
11/6/2019						UG/L
11/6/2019	W-06S	Toluene Total Dissolved Solids Field Filtered	2	2	U	UG/L
11/6/2019	W-06S	Total Dissolved Solids Field Filtered	1670	8	11	MG/L
11/6//019	W-06S	trans-1,2-Dichloroethene	3.6	3.6	U	UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/6/2019	W-06S	Vinyl chloride	3.6	3.6	U *	UG/L
11/6/2019	W-06S	Xylenes, Total	3	3	U	UG/L
11/6/2019	W-06S	Zinc, Dissolved	20	20	U	UG/L

Abbreviations:

UG/L = micrograms per liter MG/L AS N = milligrams per liter as nitrogen MG/L = milligrams per liter MG/L AS P = milligrams per liter as phosphorus

Laboratory Notes:

RA = Reanalysis of sample

DL = result following dilution of sample

B = Compound reported in the blank and sample

U = Parameter was not detected at or above the reporting limit

F1 = Matrix Spike and/or Matrix Spike Duplicate Recovery is outside acceptance limits

^ = Instrument related Quality Control is outside acceptance limits

H = Sample was prepared or analyzed beyond the specified holding time

\* = Recovery of Laboratory Control Sample or Laboratory Control Sample Duplicate is outside control limits

F2 = Matrix Spike/Matrix Spike Duplicate Relative Percent Difference exceeds control limits

E = Result exceeded calibration range

 Created by: ZTW
 Date: 1/29/2019

 Last revision by: ZTW
 Date: 1/15/2020

 Checked by: AJR
 Date: 3/5/2020

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Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/8/2019	VW-03	Fluoride	0.92	0.5		MG/L
5/8/2019	VW-03	Ammonia as N	0.61	0.015		MG/L
5/8/2019	VW-03	Total Kjeldahl Nitrogen	0.85	0.15		MG/L AS N
5/8/2019	VW-03	Nitrite	0.05	0.05	U	MG/L AS N
5/8/2019	VW-03	Total Recoverable Phenolics	0.005	0.005	U	MG/L
5/8/2019	VW-03	Aldicarb	2.5	2.5	U *	UG/L
5/8/2019	VW-03	Carbofuran	2.5	2.5	U	UG/L
5/8/2019	VW-03	Endothall	25	25	U	UG/L
5/8/2019	VW-03	Arsenic	10	10	U	UG/L
5/8/2019	VW-03	Barium	200	200	U	UG/L
5/8/2019	VW-03	Beryllium	0.4	0.4	U	UG/L
5/8/2019	VW-03	Boron	312	100		UG/L
5/8/2019	VW-03	Cadmium	5	5	U	UG/L
5/8/2019	VW-03	Calcium	53500	5000		UG/L
5/8/2019	VW-03	Chromium	10	10	U	UG/L
5/8/2019	VW-03	Cobalt	10	10	U	UG/L
5/8/2019	VW-03	Copper	17.8	10		UG/L
5/8/2019	VW-03	Iron	1240	100		UG/L
5/8/2019	VW-03	Lead	3	3	U	UG/L
5/8/2019	VW-03	Magnesium	38500	5000		UG/L
5/8/2019	VW-03	Manganese	10.1	5		UG/L
5/8/2019	VW-03	Nickel	10	10	U	UG/L
5/8/2019	VW-03	Silver	10	10	U	UG/L
5/8/2019	VW-03	Zinc	20	20	U	UG/L
5/8/2019	VW-03	Antimony	0.6	0.6	U ^	UG/L
5/8/2019	VW-03	Selenium	5	5	U	UG/L
5/8/2019	VW-03	Thallium	0.2	0.2	U	UG/L
5/8/2019	VW-03	Mercury	0.0002	0.0002	U	MG/L
5/8/2019	VW-03	cis-Chlordane	0.05	0.05	U	UG/L
5/8/2019	VW-03	Endrin	0.1	0.1	U	UG/L
5/8/2019	VW-03	gamma-BHC (Lindane)	0.05	0.05	U	UG/L
5/8/2019	VW-03	Heptachlor	0.05	0.05	U	UG/L
5/8/2019	VW-03	Heptachlor epoxide	0.05	0.05	U	UG/L
5/8/2019	VW-03	Methoxychlor	0.5	0.5	U	UG/L
5/8/2019	VW-03	Toxaphene	5	5	U	UG/L
5/8/2019	VW-03	trans-Chlordane	0.05	0.05	U	UG/L
5/8/2019	VW-03	Aroclor 1016	0.47	0.47	U	UG/L
5/8/2019	VW-03	Aroclor 1221	0.47	0.47	U	UG/L
5/8/2019	VW-03	Aroclor 1232	0.47	0.47	U	UG/L
5/8/2019	VW-03	Aroclor 1242	0.47	0.47	U	UG/L
5/8/2019	VW-03	Aroclor 1248	0.47	0.47	U	UG/L
5/8/2019	VW-03	Aroclor 1254	0.47	0.47	U	UG/L
5/8/2019	VW-03	Aroclor 1260	0.47	0.47	U	UG/L
5/8/2019	VW-03	2,4,5-TP (Silvex)	2	2	U	UG/L
5/8/2019	VW-03	2,4-D	10	10	U	UG/L
5/8/2019	VW-03	Dalapon	1	1	U II.*	UG/L
5/8/2019	VW-03	Dinoseb	1	1	U *	UG/L
5/8/2019	VW-03	Picloram	1	1	U	UG/L
5/8/2019	VW-03	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
5/8/2019	VW-03	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
5/8/2019	VW-03	1,1-Dichloroethene	2.5	2.5		UG/L
5/8/2019	VW-03	1,2,4-Trichlorobenzene	1	1	U	UG/L
5/8/2019	VW-03	1,2-Dibromo-3-Chloropropane	5	5 2	U	UG/L
5/8/2019	VW-03	1,2-Dibromoethane	2		U	UG/L
5/8/2019	VW-03	1,2-Dichloroethane	1 1 7	1 7	U	UG/L
5/8/2019	VW-03	1,2-Dichloropropane	1.7	1.7	U	UG/L
5/8/2019 5/8/2019	VW-03 VW-03	Benzene Carbon totrachlorida	1.6	1.6 2	U	UG/L UG/L
5/8/2019	V VV-U3	Carbon tetrachloride		2	U	UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/8/2019	VW-03	Chlorobenzene	1.6	1.6	U	UG/L
5/8/2019	VW-03	Chloroethane	2.5	2.5	U	UG/L
5/8/2019	VW-03	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
5/8/2019	VW-03	Ethylbenzene	1.6	1.6	U	UG/L
5/8/2019	VW-03	Methylene Chloride	1.3	1.3	U	UG/L
5/8/2019	VW-03	Styrene	1.7	1.7	U	UG/L
5/8/2019	VW-03	Tetrachloroethene	2.1	2.1	U	UG/L
5/8/2019	VW-03	Toluene	1.6	1.6	U	UG/L
5/8/2019	VW-03	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
5/8/2019	VW-03	Trichloroethene	1.9	1.9	U	UG/L
5/8/2019	VW-03	Vinyl chloride	2.3	2.3	U	UG/L
5/8/2019	VW-03	Xylenes, Total	3	3	U	UG/L
5/8/2019	VW-03	1,2-Dichlorobenzene	0.15	0.15	U	UG/L
5/8/2019	VW-03	1,4-Dichlorobenzene	0.1	0.1	U	UG/L
5/8/2019	VW-03	Alachlor	1	1	U	UG/L
5/8/2019	VW-03	Atrazine	3	3	U	UG/L
5/8/2019	VW-03	Benzo(a)pyrene	0.12	0.12	U	UG/L
5/8/2019	VW-03	Bis(2-ethylhexyl) phthalate	4.8	4.8	U	UG/L
5/8/2019	VW-03	Hexachlorocyclopentadiene	0.7	0.7	U	UG/L
5/8/2019	VW-03	Pentachlorophenol	0.34	0.34	U	UG/L
5/8/2019	VW-03	Simazine	4	4	U	UG/L
5/8/2019	VW-03	Cyanide, Total	0.01	0.01	UΗ	MG/L
5/8/2019	VW-03	Cyanide, Total	0.017	0.01	В	MG/L
5/8/2019	VW-03	Chloride	49.7	1		MG/L
5/8/2019	VW-03	Sulfate	57.2	3		MG/L
5/8/2019	VW-03	Nitrogen, Nitrate	0.022	0.02		MG/L AS N
5/8/2019	VW-03	Ethane	15	15	U *	UG/L
5/8/2019	VW-03	Ethene	13	13	U	UG/L
5/8/2019	VW-03	Methane	44	8		UG/L
5/8/2019	VW-03	Alkalinity, Total	282	10		MG/L
5/8/2019	VW-03 VW-03	Calcium and Magnesium Hardness	292000	500 5		UG/L
5/8/2019		Total Dissolved Solids	388			MG/L
5/8/2019	VW-03	Orthophosphate Sulfide	0.26	0.02	U	MG/L AS P
5/8/2019	VW-03		2	1	U	MG/L
5/8/2019 5/8/2019	VW-03 VW-03	Biochemical Oxygen Demand Total Organic Carbon	1.2	<u>2</u> 1	Н	MG/L MG/L
5/8/2019	VW-03	Total Organic Carbon  Total Organic Carbon	1.9	1	Н	MG/L
11/5/2019	VW-03	Fluoride	0.92	0.5		MG/L
11/5/2019	VW-03	Ammonia as N	0.92	0.015		MG/L
11/5/2019	VW-03		0.85	0.015	В	MG/L AS N
	1	Total Kjeldahl Nitrogen	0.85		n R	
11/5/2019 11/5/2019	VW-03 VW-03	Nitrite Total Recoverable Phenolics	0.005	0.05 0.005	UH	MG/L AS N MG/L
11/5/2019	VW-03	Aldicarb	2.5	2.5	U	UG/L
11/5/2019	VW-03	Carbofuran	2.5	2.5	U	UG/L
11/5/2019	VW-03	Endothall	2.5	2.5	U	UG/L
11/5/2019	VW-03	Arsenic	10	10	U	UG/L
11/5/2019	VW-03	Barium	200	200	U	UG/L
11/5/2019	VW-03	Beryllium	0.4	0.4	U	UG/L
11/5/2019	VW-03	Boron	309	100	U	UG/L
11/5/2019	VW-03	Cadmium	5	5	U	UG/L
11/5/2019	VW-03	Calcium	49400	5000		UG/L
11/5/2019	VW-03	Chromium	10	10	U	UG/L
11/5/2019	VW-03	Cobalt	10	10	U	UG/L
11/5/2019	VW-03	Copper	16.9	10		UG/L
11/5/2019	VW-03	Iron	953	100		UG/L
11/5/2019	VW-03	Lead	3	3	U	UG/L
11/5/2019	VW-03	Magnesium	36500	5000		UG/L
		IVIAGITOSIATII	30300	5555		U U / L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	VW-03	Nickel	10	10	U	UG/L
11/5/2019	VW-03	Silver	10	10	U	UG/L
11/5/2019	VW-03	Zinc	20	20	U	UG/L
11/5/2019	VW-03	Antimony	0.6	0.6	U	UG/L
11/5/2019	VW-03	Selenium	5	5	U	UG/L
11/5/2019	VW-03	Thallium	0.2	0.2	U	UG/L
11/5/2019	VW-03	Mercury	0.0002	0.0002	U	MG/L
11/5/2019	VW-03	cis-Chlordane	0.05	0.05	U	UG/L
11/5/2019	VW-03	Endrin	0.1	0.1	U	UG/L
11/5/2019	VW-03	gamma-BHC (Lindane)	0.05	0.05	U	UG/L
11/5/2019	VW-03	Heptachlor	0.05	0.05	U	UG/L
11/5/2019	VW-03	Heptachlor epoxide	0.05	0.05	U	UG/L
11/5/2019	VW-03	Methoxychlor	0.5	0.5	U	UG/L
11/5/2019	VW-03	Toxaphene	5	5	U	UG/L
11/5/2019	VW-03	trans-Chlordane	0.05	0.05	U	UG/L
11/5/2019	VW-03	Aroclor 1016	0.47	0.47	U	UG/L
11/5/2019	VW-03	Aroclor 1221	0.47	0.47	U	UG/L
11/5/2019	VW-03	Aroclor 1232	0.47	0.47	U	UG/L
11/5/2019	VW-03	Aroclor 1242	0.47	0.47	U	UG/L
11/5/2019	VW-03	Aroclor 1248	0.47	0.47	U	UG/L
11/5/2019	VW-03	Aroclor 1254	0.47	0.47	U	UG/L
11/5/2019	VW-03	Aroclor 1260	0.47	0.47	U	UG/L
11/5/2019	VW-03	2,4,5-TP (Silvex)	2	2	U	UG/L
11/5/2019	VW-03	2,4-D	10	10	U	UG/L
11/5/2019	VW-03	Dalapon	1	1	U *	UG/L
11/5/2019	VW-03	Dinoseb	1	1	U *	UG/L
11/5/2019	VW-03	Picloram	1	1	U *	UG/L
11/5/2019	VW-03	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/5/2019	VW-03	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/5/2019	VW-03	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/5/2019	VW-03	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/5/2019	VW-03	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/5/2019	VW-03	1,2-Dibromoethane	2	2	U	UG/L
11/5/2019	VW-03	1,2-Dichloroethane	1	1	U	UG/L
11/5/2019	VW-03	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/5/2019	VW-03	Benzene	1.6	1.6	U	UG/L
11/5/2019	VW-03	Carbon tetrachloride	2	2	U	UG/L
11/5/2019	VW-03	Chlorobenzene	1.6	1.6	U	UG/L
11/5/2019	VW-03	Chloroethane	2.5	2.5	U	UG/L
11/5/2019	VW-03	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/5/2019	VW-03	Ethylbenzene	1.6	1.6	U	UG/L
11/5/2019	VW-03	Methylene Chloride	1.3	1.3	U	UG/L
11/5/2019	VW-03	Styrene	1.7	1.7	U	UG/L
11/5/2019	VW-03	Tetrachloroethene	2.1	2.1	U	UG/L
11/5/2019	VW-03	Toluene	1.6	1.6	U	UG/L
11/5/2019	VW-03	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/5/2019	VW-03	Trichloroethene	1.9	1.9	U	UG/L
11/5/2019	VW-03	Vinyl chloride	2.3	2.3	U	UG/L
11/5/2019	VW-03	Xylenes, Total	3	3	U	UG/L
11/5/2019	VW-03 VW-03	1,2-Dichlorobenzene	0.15	0.15 0.1	U	UG/L
11/5/2019		1,4-Dichlorobenzene	0.1	1	U	UG/L
11/5/2019	VW-03	Alachlor	1		U	UG/L
11/5/2019	VW-03	Atrazine	3	3		UG/L
11/5/2019	VW-03	Benzo(a)pyrene	0.13	0.13	U	UG/L
11/5/2019 11/5/2019	VW-03 VW-03	Bis(2-ethylhexyl) phthalate	4.8 0.7	4.8 0.7	U	UG/L UG/L
11/5/2019	VW-03	Hexachlorocyclopentadiene Pentachlorophenol	0.7	0.7	U	UG/L UG/L
11/6/2010						

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	VW-03	Cyanide, Total	0.01	0.01	U *	MG/L
11/5/2019	VW-03	Chloride	50.3	1		MG/L
11/5/2019	VW-03	Sulfate	45	3		MG/L
11/5/2019	VW-03	Nitrogen, Nitrate	0.02	0.02	U	MG/L AS N
11/5/2019	VW-03	Ethane	15	15	U	UG/L
11/5/2019	VW-03	Ethene	13	13	U	UG/L
11/5/2019	VW-03	Methane	32	8		UG/L
11/5/2019	VW-03	Alkalinity, Total	266	10	F1	MG/L
11/5/2019	VW-03	Calcium and Magnesium Hardness	274000	500		UG/L
11/5/2019	VW-03	Total Dissolved Solids	378	5		MG/L
11/5/2019	VW-03	Orthophosphate	0.43	0.02		MG/L AS P
11/5/2019	VW-03	Sulfide	1	1	U	MG/L
11/5/2019	VW-03	Biochemical Oxygen Demand	2	2	U	MG/L
11/5/2019	VW-03	Total Organic Carbon	1	1	U	MG/L
11/5/2019	VW-03RE	1,2-Dichlorobenzene	0.15	0.15	UН	UG/L
11/5/2019	VW-03RE	1,4-Dichlorobenzene	0.1	0.1	UН	UG/L
11/5/2019	VW-03RE	Alachlor	1	1	UН	UG/L
11/5/2019	VW-03RE	Atrazine	3	3	UН	UG/L
11/5/2019	VW-03RE	Benzo(a)pyrene	0.13	0.13	U H *	UG/L
11/5/2019	VW-03RE	Bis(2-ethylhexyl) phthalate	4.8	4.8	UН	UG/L
11/5/2019	VW-03RE	Hexachlorocyclopentadiene	0.7	0.7	UН	UG/L
11/5/2019	VW-03RE	Pentachlorophenol	0.34	0.34	UН	UG/L
11/5/2019	VW-03RE	Simazine	4	4	UН	UG/L

#### Abbreviations:

UG/L = micrograms per liter MG/L AS N = milligrams per liter as nitrogen MG/L = milligrams per liter MG/L AS P = milligrams per liter as phosphorus

Suffix RE = Results from analysis of sampling after re-extraction

## Laboratory Notes:

- H = Sample was prepared or analyzed beyond the specified holding time
- B = Compound reported in the blank and sample
- F1 = Matrix Spike and/or Matrix Spike Duplicate Recovery is outside acceptance limits
- U = Parameter was not detected at or above the reporting limit
- ^ = Instrument related Quality Control is outside acceptance limits
- \* = Recovery of Laboratory Control Sample, Laboratory Control Sample Duplicate, or internal standard response, was outside of the control limits

 Created by: ZTW
 Date: 1/29/2019

 Last revised by: ZTW
 Date: 1/16/2020

 Checked by: AJR
 Date: 3/6/2020

 $Z:\ \ E - Groundwater \ Results \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx ] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx ] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx ] E 3 - Village Well 3.x lsx \\ \ [Appendix E 3 - Village Well 3.x lsx ] E 3 - Village Well 3.x lsx \\ \ [Ap$ 

# Appendix F Surface Water Results – 2019

# Appendix F. Surface Water Results HOD Landfill - Antioch, Illinois / SCS Engineers Project # 25212005.00

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	SW-01	Fluoride	0.5	0.5	UΛ	mg/L
5/6/2019	SW-01	Ammonia as N	0.1	0.1	U	mg/L
5/6/2019	SW-01	Total Recoverable Phenolics	0.017	0.005		mg/L
5/6/2019	SW-01	Arsenic	10	10	U	μg/L
5/6/2019	SW-01	Barium	200	200	U	μg/L
5/6/2019	SW-01	Boron	100	100	U	μg/L
5/6/2019	SW-01	Cadmium	5	5	U	μg/L
5/6/2019	SW-01	Calcium	48200	5000		μg/L
5/6/2019	SW-01	Chromium	10	10	U	μg/L
5/6/2019	SW-01	Copper	10	10	U	µg/L
5/6/2019	SW-01	Iron, Dissolved	100	100	U	μg/L
5/6/2019	SW-01	Lead	3	3	U	μg/L
5/6/2019	SW-01	Magnesium	26800	5000		μg/L
5/6/2019	SW-01	Manganese	59.7	5		μg/L
5/6/2019	SW-01	Nickel	10	10	U	μg/L
5/6/2019	SW-01	Silver	10	10	U	μg/L
5/6/2019	SW-01	Zinc	20	20	Ü	µg/L
5/6/2019	SW-01	Selenium	5	5	Ü	µg/L
5/6/2019	SW-01	Chromium, hexavalent	0.01	0.01	U	mg/L
5/6/2019	SW-01	Mercury	0.2	0.2	U	µg/L
5/6/2019	SW-01	1,2-Dichloroethene, Total	1	1	U	µg/L
5/6/2019	SW-01	Carbon disulfide	2.1	2.1	U	µg/L
5/6/2019	SW-01	Trichloroethene	1.9	1.9	U	μg/L
5/6/2019	SW-01	Vinyl chloride	2.3	2.3	U	μg/L
5/6/2019	SW-01	Cyanide, Total	0.01	0.01	U	mg/L
5/6/2019	SW-01	Chloride	117	1		mg/L
5/6/2019	SW-01	Sulfate	1.5	1.5		mg/L
5/6/2019	SW-01	Calcium and Magnesium Hardness	231000	500		μg/L
5/6/2019	SW-01	Total Dissolved Solids	369	5		mg/L
5/6/2019	SW-01	Cr (III)	10	10	U	μg/L
5/6/2019	SW-01	Unionized Ammonia	0.1	0.1	U	mg/L AS N
5/6/2019	SW-02	Fluoride	0.5	0.5	UΛ	mg/L
5/6/2019	SW-02	Ammonia as N	0.1	0.1	U	mg/L
5/6/2019	SW-02	Total Recoverable Phenolics	0.005	0.005	U	mg/L
5/6/2019	SW-02	Arsenic	10	10	U	μg/L
5/6/2019	SW-02	Barium	200	200	U	μg/L μg/L
5/6/2019	SW-02	Boron	100	100	U	μg/L μg/L
5/6/2019	SW-02	Cadmium	5	5	U	μg/L μg/L
			45000	5000	U	
5/6/2019 5/6/2019	SW-02 SW-02	Calcium Chromium	10	10	U	μg/L μg/L
5/6/2019	SW-02	Copper	10	10	U	μg/L μg/L
5/6/2019	SW-02	Iron, Dissolved	100	100	U	
5/6/2019	SW-02	Lead	3	3	U	μg/L
5/6/2019	SW-02	Magnesium	24500	5000	U	μg/L
5/6/2019	SW-02	Manganese	29.8	5		μg/L μg/L
5/6/2019	SW-02	Nickel	10	10	U	
					_	μg/L
5/6/2019	SW-02	Silver	10	10	U	μg/L
5/6/2019	SW-02	Zinc	20	20	U	μg/L
5/6/2019	SW-02	Selenium	5	5	U	μg/L
5/6/2019	SW-02	Chromium, hexavalent	0.01	0.01	U	mg/L
5/6/2019	SW-02	Mercury	0.2	0.2	U	μg/L

# Appendix F. Surface Water Results HOD Landfill - Antioch, Illinois / SCS Engineers Project # 25212005.00

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
5/6/2019	SW-02	1,2-Dichloroethene, Total	1	1	U	μg/L
5/6/2019	SW-02	Carbon disulfide	2.1	2.1	U	μg/L
5/6/2019	SW-02	Trichloroethene	1.9	1.9	U	μg/L
5/6/2019	SW-02	Vinyl chloride	2.3	2.3	U	μg/L
5/6/2019	SW-02	Cyanide, Total	0.01	0.01	U	mg/L
5/6/2019	SW-02	Chloride	132	1		mg/L
5/6/2019	SW-02	Sulfate	1.5	1.5	U	mg/L
5/6/2019	SW-02	Calcium and Magnesium Hardness	213000	500		μg/L
5/6/2019	SW-02	Total Dissolved Solids	365	5		mg/L
5/6/2019	SW-02	Cr (III)	10	10	U	μg/L
5/6/2019	SW-02	Unionized Ammonia	0.1	0.1	U	mg/L AS N
11/5/2019	SW-01	Fluoride	0.5	0.5	U	mg/L
11/5/2019	SW-01	Ammonia as N	0.1	0.1	U	mg/L
11/5/2019	SW-01	Total Recoverable Phenolics	0.0092	0.005	В	mg/l
11/5/2019	SW-01	Arsenic	10	10	U	μg/L
11/5/2019	SW-01	Barium	200	200	U	μg/L
11/5/2019	SW-01	Boron	100	100	U	μg/L
11/5/2019	SW-01	Cadmium	5	5	U	μg/L
11/5/2019	SW-01	Calcium	41500	5000		µg/L
11/5/2019	SW-01	Chromium	10	10	U	µg/L
11/5/2019	SW-01	Copper	10	10	U	μg/L
11/5/2019	SW-01	Iron, Dissolved	100	100	U	μg/L
11/5/2019	SW-01	Lead	3	3	U	μg/L
11/5/2019	SW-01	Magnesium	21700	5000		μg/L
11/5/2019	SW-01	Manganese	21.4	5		μg/L
11/5/2019	SW-01	Nickel	10	10	U	µg/L
11/5/2019	SW-01	Silver	10	10	U	µg/L
11/5/2019	SW-01	Zinc	20	20	U	µg/L
11/5/2019	SW-01	Selenium	5	5	U	μg/L
11/5/2019	SW-01	Chromium, hexavalent	0.01	0.01	U	mg/L
11/5/2019	SW-01	Mercury	0.2	0.2	U	μg/L
11/5/2019	SW-01	1,2-Dichloroethene, Total	1	1	U	µg/L
11/5/2019	SW-01	Carbon disulfide	2.1	2.1	U	μg/L
11/5/2019	SW-01	Trichloroethene	1.9	1.9	U	μg/L
11/5/2019	SW-01	Vinyl chloride	2.3	2.3	U	μg/L
11/5/2019	SW-01	Cyanide, Total	0.01	0.01	U*	mg/L
11/5/2019	SW-01	Chloride	63.4	1		mg/L
11/5/2019	SW-01	Sulfate	1.5	1.5	U F1	mg/L
11/5/2019	SW-01	Calcium and Magnesium Hardness	193000	500		μg/L
11/5/2019	SW-01	Total Dissolved Solids	278	5		mg/L
11/5/2019	SW-01	Cr (III)	10	10	U	μg/L
11/5/2019	SW-01	Unionized Ammonia	0.1	0.1	U	
					-	mg/L AS N
11/5/2019	SW-02	Fluoride	0.5	0.5	U	mg/L
11/5/2019	SW-02	Ammonia as N	0.1	0.1	U	mg/L
11/5/2019	SW-02	Total Recoverable Phenolics	0.013	0.005	В	mg/L
11/5/2019	SW-02	Arsenic	10	10	U	μg/L
11/5/2019	SW-02	Barium	200	200	U	µg/L
11/5/2019	SW-02	Boron	100	100	U	µg/L
11/5/2019	SW-02	Cadmium	5	5	U	μg/L

# Appendix F. Surface Water Results HOD Landfill - Antioch, Illinois / SCS Engineers Project # 25212005.00

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	SW-02	Calcium	40200	5000		μg/L
11/5/2019	SW-02	Chromium	Chromium 10		U	μg/L
11/5/2019	SW-02	Copper	10	10	U	μg/L
11/5/2019	SW-02	Iron, Dissolved	100	100	U	μg/L
11/5/2019	SW-02	Lead	3	3	U	μg/L
11/5/2019	SW-02	Magnesium	21000	5000		μg/L
11/5/2019	SW-02	Manganese	24	5		μg/L
11/5/2019	SW-02	Nickel	10	10	U	μg/L
11/5/2019	SW-02	Silver	10	10	U	μg/L
11/5/2019	SW-02	Zinc	20	20	U	μg/L
11/5/2019	SW-02	Selenium	5	5	U	μg/L
11/5/2019	SW-02	Chromium, hexavalent	0.01	0.01	U	mg/L
11/5/2019	SW-02	Mercury	0.2	0.2	U	μg/L
11/5/2019	SW-02	1,2-Dichloroethene, Total	1	1	U	μg/L
11/5/2019	SW-02	Carbon disulfide	2.1	2.1	U	μg/L
11/5/2019	SW-02	Trichloroethene	1.9	1.9	U	μg/L
11/5/2019	SW-02	Vinyl chloride	2.3	2.3	U	μg/L
11/5/2019	SW-02	Cyanide, Total	0.01	0.01	U *	mg/L
11/5/2019	SW-02	Chloride	84.9	1		mg/L
11/5/2019	SW-02	Sulfate	1.5	1.5	U	mg/L
11/5/2019	SW-02	Calcium and Magnesium Hardness	187000	500		μg/L
11/5/2019	SW-02	Total Dissolved Solids	308	5		mg/L
11/5/2019	SW-02	Cr (III)	10	10	U	μg/L
11/5/2019	SW-02	Unionized Ammonia	0.1	0.1	U	mg/L AS N

## Abbreviations:

UG/L = micrograms per liter

MG/L AS N = milligrams per liter as nitrogen

MG/L = milligrams per liter as phosphorus

UMHOS/CM = micromhos/centimeter MV = millivolts
DEG F = degrees farenheit SU = standard units

NTU = Nephelometric Turbidity Unit

Suffix RA = Re-analysis of sample

#### Laboratory Notes:

F1 = Matrix Spike and/or Matrix Spike Duplicate Recovery is outside acceptance limits

- \* = Recovery of Laboratory Control Sample or Laboratory Control Sample Duplicate is outside control limits
- B = Compound reported in the blank and sample
- U = Parameter was not detected at or above the reporting limit
- H = Sample was prepared or analyzed beyond the specified holding time

Created by: ZTW	Date: 1/29/2019
Last revision by: ZTW	Date: 3/5/2020
Checked by: JSN	Date: 3/6/2020

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# Appendix G

Quality Control Sample Results – Second 2019 Semi-annual Sampling Event (November 2019)

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	Matrix Spike (US-05D)	Fluoride, Dissolved	99	0.5	90	%
11/5/2019	Matrix Spike (US-05D)	Ammonia	106	0.1		%
11/5/2019	Matrix Spike (US-05D)	Total Kjeldahl Nitrogen	99	0.15		%
11/5/2019	Matrix Spike (US-05D)	Nitrite	104	0.02		%
11/5/2019	Matrix Spike (US-05D)	Barium, Dissolved	105	200		%
11/5/2019	Matrix Spike (US-05D)	Boron, Dissolved	112	100		%
11/5/2019	Matrix Spike (US-05D)	Cadmium, Dissolved	101	5		%
11/5/2019	Matrix Spike (US-05D)	Calcium, Dissolved	102	5000		%
11/5/2019	Matrix Spike (US-05D)	Chromium, Dissolved	103	10		%
11/5/2019	Matrix Spike (US-05D)	Cobalt, Dissolved	98	10		<u>%</u>
11/5/2019	Matrix Spike (US-05D)	Copper, Dissolved	97	10		%
11/5/2019	Matrix Spike (US-05D)	Iron, Dissolved	100	100		%
11/5/2019 11/5/2019	Matrix Spike (US-05D)	Magnesium, Dissolved  Manganese, Dissolved	107	5000 5		<u>%</u> %
11/5/2019	Matrix Spike (US-05D)  Matrix Spike (US-05D)	Nickel, Dissolved	99	10		<u>%</u> %
11/5/2019	Matrix Spike (US-05D)	Silver, Dissolved	100	10		<u>~</u> %
11/5/2019	Matrix Spike (US-05D)	Zinc, Dissolved	100	20		<del></del>
11/5/2019	Matrix Spike (US-05D)	Antimony, Dissolved	111	0.6		<del></del>
11/5/2019	Matrix Spike (US-05D)	Arsenic, Dissolved	101	10		
11/5/2019	Matrix Spike (US-05D)	Beryllium, Dissolved	103	0.4		<del></del>
11/5/2019	Matrix Spike (US-05D)	Lead, Dissolved	97	7.5		%
11/5/2019	Matrix Spike (US-05D)	Selenium, Dissolved	100	5		<del></del>
11/5/2019	Matrix Spike (US-05D)	Thallium, Dissolved	94	0.2		%
11/5/2019	Matrix Spike (US-05D)	Mercury, Dissolved	102	0.2		<del>%</del>
11/5/2019	Matrix Spike (US-05D)	1,1-Dichloroethene	102	2.5		%
11/5/2019	Matrix Spike (US-05D)	Benzene	102	1.6		%
11/5/2019	Matrix Spike (US-05D)	Chlorobenzene	94	1.6		%
11/5/2019	Matrix Spike (US-05D)	Toluene	95	1.6		%
11/5/2019	Matrix Spike (US-05D)	Trichloroethene	102	1.9		%
11/5/2019	Matrix Spike (US-05D)	Dissolved Cyanide	100	0.01	Н	%
11/5/2019	Matrix Spike (US-05D)	Dissolved Cyanide	74	0.01	F1 ^	%
11/5/2019	Matrix Spike (US-05D)	Chloride, Dissolved	107	1		%
11/5/2019	Matrix Spike (US-05D)	Sulfate	113	4.5		%
11/5/2019	Matrix Spike (US-05D)	Sulfate, Dissolved	105	4.5		<u>%</u>
11/5/2019	Matrix Spike (US-05D)	Ethane	107	15		%
11/5/2019	Matrix Spike (US-05D)	Ethene	104	13		%
11/5/2019	Matrix Spike (US-05D)	Methane	125	8 10		%
11/5/2019 11/5/2019	Matrix Spike (US-05D)	Alkalinity, Total Orthophosphate	74 103	0.02		<u>%</u> %
11/5/2019	Matrix Spike (US-05D)  Matrix Spike (US-05D)	Sulfide	103	1.3		<u>/^</u> %
11/5/2019	Matrix Spike (US-05D)  Matrix Spike (US-05D)	Biochemical Oxygen Demand	106	60		<u>/^</u> %
11/5/2019	Matrix Spike (US-05D)	Total Organic Carbon	111	1		<del></del>
11/5/2019	Matrix Spike Duplicate (US-05D)	Fluoride, Dissolved	100	0.5		<del></del>
11/5/2019	Matrix Spike Duplicate (US-05D)	Ammonia	111	0.1	F1	
11/5/2019	Matrix Spike Duplicate (US-05D)	Total Kjeldahl Nitrogen	104	0.15		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Nitrite	102	0.02		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Barium, Dissolved	104	200		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Boron, Dissolved	106	100		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Cadmium, Dissolved	102	5		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Calcium, Dissolved	103	5000		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Chromium, Dissolved	103	10		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Cobalt, Dissolved	97	10		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Copper, Dissolved	97	10		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Iron, Dissolved	100	100		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Magnesium, Dissolved	102	5000		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Manganese, Dissolved	100	5		<u>%</u>
11/5/2019	Matrix Spike Duplicate (US-05D)	Nickel, Dissolved	98	10		<u>%</u>
11/5/2019	Matrix Spike Duplicate (US-05D)	Silver, Dissolved	97	10		<u>%</u>
11/5/2019	Matrix Spike Duplicate (US-05D)	Zinc, Dissolved	100	20		<u>%</u>
11/5/2019	Matrix Spike Duplicate (US-05D)	Antimony, Dissolved	114	0.6	ļļ	<u>%</u>
11/5/2019	Matrix Spike Duplicate (US-05D)	Arsenic, Dissolved	104	10		<u>%</u>
11/5/2019	Matrix Spike Duplicate (US-05D)	Beryllium, Dissolved	105 98	0.4 7.5	-	<u>%</u> ~
11/5/2019 11/5/2019	Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)	Lead, Dissolved Selenium, Dissolved	101	7.5 5		<u>%</u> %
11/1//11/9		Thallium, Dissolved	98	0.2		<u> </u>
	Matrix Spike Duplicate (US DED)	ITIGIIIOTTI, DISSUIVEG				% %
11/5/2019	Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)	Mercury Dissolved	101	(1.7)		
11/5/2019 11/5/2019	Matrix Spike Duplicate (US-05D)	Mercury, Dissolved	101	0.2		
11/5/2019 11/5/2019 11/5/2019	Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)	1,1-Dichloroethene	103	2.5		%
11/5/2019 11/5/2019 11/5/2019 11/5/2019	Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)	1,1-Dichloroethene Benzene	103 98	2.5 1.6		% %
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)	1,1-Dichloroethene Benzene Chlorobenzene	103 98 95	2.5 1.6 1.6		% % %
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)	1,1-Dichloroethene Benzene Chlorobenzene Toluene	103 98	2.5 1.6 1.6 1.6		% %
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)  Matrix Spike Duplicate (US-05D)	1,1-Dichloroethene Benzene Chlorobenzene	103 98 95 94	2.5 1.6 1.6	Н	% % %

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	Matrix Spike Duplicate (US-05D)	Chloride, Dissolved	109	1		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Sulfate	109	4.5		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Sulfate, Dissolved	80	4.5		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Ethane	103	15		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Ethene	100	13		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Methane	122	8		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Alkalinity, Total	66	10		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Orthophosphate	105	0.02		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Sulfide	114	1.3		%
11/5/2019	Matrix Spike Duplicate (US-05D)	Biochemical Oxygen Demand	101	60		%
11/5/2019 11/4/2019	Matrix Spike Duplicate (US-05D)	Total Organic Carbon 1,1,1-Trichloroethane	108	2.1	U	% UG/L
11/4/2019	Atmospheric Blank (162089) Atmospheric Blank (162089)	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/4/2019	Atmospheric Blank (162089)	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/4/2019	Atmospheric Blank (162089)	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/4/2019	Atmospheric Blank (162089)	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/4/2019	Atmospheric Blank (162089)	1,2-Dibromoethane	2	2	Ü	UG/L
11/4/2019	Atmospheric Blank (162089)	1,2-Dichloroethane	1	1	Ü	UG/L
11/4/2019	Atmospheric Blank (162089)	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Benzene	1.6	1.6	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Carbon tetrachloride	2	2	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Chlorobenzene	1.6	1.6	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Chloroethane	2.5	2.5	U	UG/L
11/4/2019	Atmospheric Blank (162089)	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Ethylbenzene	1.6	1.6	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Methylene Chloride	1.3	1.3	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Styrene	1.7	1.7	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Tetrachloroethene	2.1	2.1	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Toluene	1.6	1.6	U	UG/L
11/4/2019	Atmospheric Blank (162089)	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Trichloroethene	1.9	1.9	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Vinyl chloride	2.3	2.3	U	UG/L
11/4/2019	Atmospheric Blank (162089)	Xylenes, Total	0.97	3 0.5	U	UG/L
11/5/2019 11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	Fluoride, Dissolved Ammonia	0.97	0.5		MG/L MG/L AS N
11/5/2019	Duplicate Sample (US-04D)	Total Kjeldahl Nitrogen	0.84	0.15		MG/L AS N
11/5/2019	Duplicate Sample (US-04D)	Nitrate, Dissolved	0.04	0.02	U	MG/L MG/L
11/5/2019	Duplicate Sample (US-04D)	Nitrite	0.02	0.02	U	MG/L AS N
11/5/2019	Duplicate Sample (US-04D)	Barium, Dissolved	200	200	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Boron, Dissolved	419	100	- ŭ	UG/L
11/5/2019	Duplicate Sample (US-04D)	Cadmium, Dissolved	5	5	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Calcium, Dissolved	32400	5000		UG/L
11/5/2019	Duplicate Sample (US-04D)	Chromium, Dissolved	10	10	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Cobalt, Dissolved	10	10	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Copper, Dissolved	10	10	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Iron, Dissolved	100	100	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Magnesium, Dissolved	21700	5000		UG/L
11/5/2019	Duplicate Sample (US-04D)	Manganese, Dissolved	13	5		UG/L
11/5/2019	Duplicate Sample (US-04D)	Nickel, Dissolved	10	10	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Silver, Dissolved	10	10	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Zinc, Dissolved	20	20	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Antimony, Dissolved	0.6	0.6	U * ^	UG/L
11/5/2019 11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	Arsenic, Dissolved	0.4	10 0.4	U	UG/L UG/L
11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	Beryllium, Dissolved Lead, Dissolved	7.5	7.5	U	UG/L UG/L
11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	Selenium, Dissolved	7.5 5	7.5 5	U ^	UG/L
11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	Thallium, Dissolved	0.2	0.2	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Mercury, Dissolved	0.2	0.2	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	1,1-Dichloroethene	2.5	2.5	Ü	UG/L
11/5/2019		1,2,4-Trichlorobenzene	1	1	U	UG/L
11/3/2017	Duplicate Sample (US-04D)	1,2,4-11101000012010				UG/L
11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane	5	5	U	00/1
			5 2	5 2	U	UG/L
11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane				
11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)  Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichloroethane 1,2-Dichloropropane	2 1 1.7	2 1 1.7	U U U	UG/L UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichloroethane 1,2-Dichloropropane Benzene	2 1 1.7 1.6	2 1 1.7 1.6	U U U	UG/L UG/L UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichloroethane 1,2-Dichloropropane Benzene Carbon tetrachloride	2 1 1.7 1.6 2	2 1 1.7 1.6 2	U U U U	UG/L UG/L UG/L UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichloroethane 1,2-Dichloropropane Benzene Carbon tetrachloride Chlorobenzene	2 1 1.7 1.6 2 1.6	2 1 1.7 1.6 2	U U U U U	UG/L UG/L UG/L UG/L UG/L UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichloroethane 1,2-Dichloropropane Benzene Carbon tetrachloride Chlorobenzene Chloroethane	2 1 1.7 1.6 2 1.6 2.5	2 1 1.7 1.6 2 1.6 2.5	U U U U U	UG/L UG/L UG/L UG/L UG/L UG/L UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichloroethane 1,2-Dichloropropane Benzene Carbon tetrachloride Chlorobenzene Chloroethane cis-1,2-Dichloroethene	2 1 1.7 1.6 2 1.6 2.5 1.8	2 1 1.7 1.6 2 1.6 2.5 1.8	U U U U U U	UG/L UG/L UG/L UG/L UG/L UG/L UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (US-04D)	1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichloroethane 1,2-Dichloropropane Benzene Carbon tetrachloride Chlorobenzene Chloroethane	2 1 1.7 1.6 2 1.6 2.5	2 1 1.7 1.6 2 1.6 2.5	U U U U U	UG/L UG/L UG/L UG/L UG/L UG/L UG/L UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	Duplicate Sample (US-04D)	Styrene	1.7	1.7	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Tetrachloroethene	2.1	2.1	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Toluene	1.6	1.6	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Trichloroethene	1.9	1.9	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Vinyl chloride	2.3	2.3	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Xylenes, Total	3	3	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Dissolved Cyanide	0.01	0.01	U *	MG/L
11/5/2019	Duplicate Sample (US-04D)	Chloride, Dissolved	25.2	1		MG/L
11/5/2019	Duplicate Sample (US-04D)	Sulfate Disastrant	44.7	4.5		MG/L
11/5/2019	Duplicate Sample (US-04D)	Sulfate, Dissolved	49.1 0.02	3 0.02	U	MG/L MG/L AS N
11/5/2019	Duplicate Sample (US-04D)  Duplicate Sample (US-04D)	Nitrogen, Nitrate Ethane	15	15	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Ethene	13	13	U	UG/L
11/5/2019	Duplicate Sample (US-04D)	Methane	23	8		UG/L
11/5/2019	Duplicate Sample (US-04D)	Alkalinity, Total	206	10		MG/L
11/5/2019	Duplicate Sample (US-04D)	Calcium and Magnesium Hardness, Dissolved	170000	500		UG/L
11/5/2019	Duplicate Sample (US-04D)	Total Dissolved Solids Field Filtered	294	5		MG/L
11/5/2019	Duplicate Sample (US-04D)	Orthophosphate	0.32	0.02		MG/L AS P
11/5/2019	Duplicate Sample (US-04D)	Sulfide	1	1	U	MG/L
11/5/2019	Duplicate Sample (US-04D)	Biochemical Oxygen Demand	2	2	U	MG/L
11/5/2019	Duplicate Sample (US-04D)	Total Organic Carbon	1.5	1		MG/L
11/4/2019	Trip Blank (162089)	1,1,1-Trichloroethane	2.1	2.1	U	UG/L
11/4/2019	Trip Blank (162089)	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/4/2019	Trip Blank (162089)	1,1-Dichloroethene	2.5	2.5	U	UG/L
11/4/2019	Trip Blank (162089)	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/4/2019	Trip Blank (162089)	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/4/2019	Trip Blank (162089)	1,2-Dibromoethane	2	2	U	UG/L
11/4/2019	Trip Blank (162089)	1,2-Dichloroethane	1	1	U	UG/L
11/4/2019	Trip Blank (162089)	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/4/2019	Trip Blank (162089)	Benzene	1.6	1.6	U	UG/L
11/4/2019	Trip Blank (162089)	Carbon tetrachloride	2	2	U	UG/L
11/4/2019	Trip Blank (162089)	Chlorobenzene	1.6	1.6	U	UG/L
11/4/2019	Trip Blank (162089) Trip Blank (162089)	Chloroethane cis-1,2-Dichloroethene	2.5	2.5 1.8	U	UG/L UG/L
11/4/2019	Trip Blank (162089)	Ethylbenzene	1.6	1.6	U	UG/L
11/4/2017	Trip Blank (162089)	Methylene Chloride	1.3	1.3	U	UG/L
11/4/2019	Trip Blank (162089)	Styrene	1.7	1.7	U	UG/L
11/4/2019	Trip Blank (162089)	Tetrachloroethene	2.1	2.1	Ü	UG/L
11/4/2019	Trip Blank (162089)	Toluene	1.6	1.6	U	UG/L
11/4/2019	Trip Blank (162089)	trans-1,2-Dichloroethene	1.9	1.9	Ü	UG/L
11/4/2019	Trip Blank (162089)	Trichloroethene	1.9	1.9	U	UG/L
11/4/2019	Trip Blank (162089)	Vinyl chloride	2.3	2.3	U	UG/L
11/4/2019	Trip Blank (162089)	Xylenes, Total	3	3	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Fluoride, Dissolved	0.5	0.5	U	MG/L
11/6/2019	Duplicate Sample (US-06S)	Nitrate, Dissolved	0.048	0.02		MG/L
11/6/2019	Duplicate Sample (US-06S)	Barium, Dissolved	200	200	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Boron, Dissolved	100	100	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Cadmium, Dissolved	5	5	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Calcium, Dissolved	107000	5000		UG/L
11/6/2019	Duplicate Sample (US-06S)	Chromium, Dissolved	10	10	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Cobalt, Dissolved	10	10	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Copper, Dissolved	10	10	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Iron, Dissolved	4120	100		UG/L
11/6/2019	Duplicate Sample (US-06S)  Duplicate Sample (US-06S)	Magnesium, Dissolved  Manganese, Dissolved	46900 91	5000 5		UG/L UG/L
11/6/2019	Duplicate Sample (US-06S)  Duplicate Sample (US-06S)	Nickel, Dissolved	10	10	U	UG/L UG/L
11/6/2019	Duplicate Sample (US-06S)	Silver, Dissolved	10	10	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Zinc, Dissolved	20	20	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Antimony, Dissolved	0.6	0.6	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Arsenic, Dissolved	10	10	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Beryllium, Dissolved	0.4	0.4	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Lead, Dissolved	7.5	7.5	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Selenium, Dissolved	5	5	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Thallium, Dissolved	0.2	0.2	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Mercury, Dissolved	0.2	0.2	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	1,1,1-Trichloroethane	2.1	2.1	U *	UG/L
11/6/2019	Duplicate Sample (US-06S)	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	1,1-Dichloroethene	2.5	2.5	U *	UG/L
11/6/2019	Duplicate Sample (US-06S)	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/6/2019 11/6/2019 11/6/2019		1,2-Dibromo-3-Chloropropane 1,2-Dibromoethane 1,2-Dichloroethane	5 2	5 2 1	U U U	UG/L UG/L UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/6/2019	Duplicate Sample (US-06S)	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Benzene	1.6	1.6	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Carbon tetrachloride	2	2	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Chlorobenzene	1.6	1.6	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Ethylbenzene	1.6	1.6	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Methylene Chloride	1.3	1.3	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Styrene	1.7	1.7	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Tetrachloroethene	2.1	2.1	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Toluene	1.6	1.6	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Trichloroethene	1.9	1.9	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Vinyl chloride	2.3	2.3	U *	UG/L
11/6/2019	Duplicate Sample (US-06S)	Xylenes, Total	3	3	U	UG/L
11/6/2019	Duplicate Sample (US-06S)	Dissolved Cyanide	0.01	0.01	U *	MG/L
11/6/2019	Duplicate Sample (US-06S)	Chloride, Dissolved	131	3.4		MG/L
11/6/2019	Duplicate Sample (US-06S)	Sulfate, Dissolved	3	3	U	MG/L
11/6/2019	Duplicate Sample (US-06S)	Calcium and Magnesium Hardness, Dissolved	461000	500		UG/L
11/6/2019	Duplicate Sample (US-06S)	Total Dissolved Solids Field Filtered	569	5		MG/L
11/6/2019	Trip Blank (162143)	1,1,1-Trichloroethane	2.1	2.1	U *	UG/L
11/6/2019	Trip Blank (162143)	1,1,2-Trichloroethane	1.9	1.9	U	UG/L
11/6/2019	Trip Blank (162143)	1,1-Dichloroethene	2.5	2.5	U *	UG/L
11/6/2019	Trip Blank (162143)	1,2,4-Trichlorobenzene	1	1	U	UG/L
11/6/2019	Trip Blank (162143)	1,2-Dibromo-3-Chloropropane	5	5	U	UG/L
11/6/2019	Trip Blank (162143)	1,2-Dibromoethane	2	2	U	UG/L
11/6/2019	Trip Blank (162143)	1,2-Dichloroethane	1	1	U	UG/L
11/6/2019	Trip Blank (162143)	1,2-Dichloropropane	1.7	1.7	U	UG/L
11/6/2019	Trip Blank (162143)	Benzene	1.6	1.6	U	UG/L
11/6/2019	Trip Blank (162143)	Carbon tetrachloride	2	2	U	UG/L
11/6/2019	Trip Blank (162143)	Chlorobenzene	1.6	1.6	U	UG/L
11/6/2019	Trip Blank (162143)	cis-1,2-Dichloroethene	1.8	1.8	U	UG/L
11/6/2019	Trip Blank (162143)	Ethylbenzene	1.6	1.6	U	UG/L
11/6/2019	Trip Blank (162143)	Methylene Chloride	1.3	1.3	U	UG/L
11/6/2019	Trip Blank (162143)	Styrene	1.7	1.7	U	UG/L
11/6/2019	Trip Blank (162143)	Tetrachloroethene	2.1	2.1	U	UG/L
11/6/2019	Trip Blank (162143)	Toluene	1.6	1.6	U	UG/L
11/6/2019	Trip Blank (162143)	trans-1,2-Dichloroethene	1.9	1.9	U	UG/L
11/6/2019	Trip Blank (162143)	Trichloroethene	1.9	1.9	U	UG/L
11/6/2019	Trip Blank (162143)	Vinyl chloride	2.3	2.3	U *	UG/L
11/6/2019	Trip Blank (162143)	Xylenes, Total	3	3	U	UG/L
11/5/2019	Trip Blank (162142)	1,2-Dichloroethene, Total	1	1	U	UG/L
11/5/2019	Trip Blank (162142)	Carbon disulfide	2.1	2.1	U	UG/L
11/5/2019	Trip Blank (162142)	Trichloroethene	1.9	1.9	U	UG/L
11/5/2019	Trip Blank (162142)	Vinyl chloride	2.3	2.3	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Fluoride	0.5	0.5	U	MG/L
11/5/2019	Duplicate Sample (SW-01)	Ammonia as N	0.1	0.1	U	MG/L
11/5/2019	Duplicate Sample (SW-01)	Total Recoverable Phenolics	0.0075	0.005		MG/L
11/5/2019	Duplicate Sample (SW-01)	Arsenic	10	10	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Barium	200	200	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Boron	100	100	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Cadmium	5	5	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Calcium	41200	5000		UG/L
11/5/2019	Duplicate Sample (SW-01)	Chromium	10	10	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Copper	10	10	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Iron, Dissolved	100	100	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Lead	3	3	U	UG/L
11/5/2019		Magnesium	21600	5000		UG/L
, 0, 2017	Duplicate Sample (SW-01)		01.5	-		UG/L
11/5/2019	Duplicate Sample (SW-01)  Duplicate Sample (SW-01)	Manganese	21.5	5		
		Manganese Nickel	10	10	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Ŭ		10 10	U	UG/L UG/L
11/5/2019 11/5/2019	Duplicate Sample (SW-01) Duplicate Sample (SW-01)	Nickel	10	10		
11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (SW-01)  Duplicate Sample (SW-01)  Duplicate Sample (SW-01)	Nickel Silver	10 10 20 5	10 10 20 5	U	UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (SW-01) Duplicate Sample (SW-01) Duplicate Sample (SW-01) Duplicate Sample (SW-01)	Nickel Silver Zinc	10 10 20	10 10 20	U U	UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (SW-01)	Nickel Silver Zinc Selenium	10 10 20 5	10 10 20 5	U U U	UG/L UG/L UG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (SW-01)	Nickel Silver Zinc Selenium Chromium, hexavalent	10 10 20 5 0.01	10 10 20 5 0.01	U U U	UG/L UG/L UG/L MG/L
11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019 11/5/2019	Duplicate Sample (SW-01)	Nickel Silver Zinc Selenium Chromium, hexavalent Mercury	10 10 20 5 0.01 0.2	10 10 20 5 0.01	U U U U	UG/L UG/L UG/L MG/L UG/L

Sample Date	Sample	Parameter	Result	Reporting Limit	Flags	Units
11/5/2019	Duplicate Sample (SW-01)	Vinyl chloride	2.3	2.3	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Cyanide, Total	0.01	0.01	U *	MG/L
11/5/2019	Duplicate Sample (SW-01)	Chloride	62.9	1		MG/L
11/5/2019	Duplicate Sample (SW-01)	Sulfate	1.5	1.5	U	MG/L
11/5/2019	Duplicate Sample (SW-01)	Calcium and Magnesium Hardness	192000	500		UG/L
11/5/2019	Duplicate Sample (SW-01)	Total Dissolved Solids	312	5		MG/L
11/5/2019	Duplicate Sample (SW-01)	Cr (III)	10	10	U	UG/L
11/5/2019	Duplicate Sample (SW-01)	Unionized Ammonia	0.1	0.1	U	MG/L AS N

#### Abbreviations:

UG/L = micrograms per liter MG/L AS N = milligrams per liter as nitrogen MG/L = milligrams per liter MG/L AS P = milligrams per liter as phosphorus

#### Laboratory Notes:

Lab Project number shown in parentheses following Trip Blank name

H = Sample was prepped or analyzed beyond the specified holding time

U = Parameter was not detected at or above the reporting limit

F1 = Matrix Spike and/or Matrix Spike Duplicate Recovery is outside acceptance limits

\* = Recovery of Laboratory Control Sample or Laboratory Control Sample Duplicate is outside control limits

 $\wedge$  = Instrument related Quality Control is outside acceptance limits

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Last revision by:	ZTW	Date: 1/16/2020
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Z:\Projects\25212005.00\Reports\2019\Annual Report\Appendics\Appendix G - QC Sample Results\[Appendix G - Quality Control Sample Results.xls]/

# Appendix H

Laboratory Narratives – Second 2019 Semi-annual Sampling Event (November 2019)

Client: Waste Management

Project/Site: H.O.D. Landfill

Job ID: 480-162083-1

Job ID: 480-162083-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-162083-1

#### Comments

No additional comments.

#### Receipt

The sample was received on 11/5/2019 9:45 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

#### GC/MS VOA

Method 8260C: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: LCT-01 (480-162083-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## **General Chemistry**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Client: Waste Management

Job ID: 480-162089-1

Project/Site: H.O.D. Landfill

Job ID: 480-162089-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-162089-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/5/2019 9:45 AM and 11/6/2019 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 5 coolers at receipt time were 1.8° C, 2.1° C, 2.4° C, 2.7° C and 3.1° C.

#### GC/MS VOA

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-503554 recovered outside acceptance criteria, low biased, for Vinyl chloride. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. The following samples are impacted: ATMOSPHERIC BLANK (480-162089-1), R-01D (480-162089-2), US-01D (480-162089-3), US-02D (480-162089-4) and TB-1 (480-162089-5).

Method 8260C: The following sample was diluted to bring the concentration of target analytes within the calibration range: US-03D (480-162151-6). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### HPLC/IC

Method 300.0: The results reported for the following sample do not concur with results previously reported for this site: W-03D (480-162151-2). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **GC VOA**

Method RSK-175: The following sample was diluted to bring the concentration of target analytes within the calibration range: W-08D (480-162151-7). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method 6010C: The results reported for the following sample do not concur with results previously reported for this site: W-03D (480-162151-2). Reanalysis was performed, and the result(s) confirmed.

Method 6020A: The Initial Calibration Verification (ICV 480-506118/5) recovered above the upper control limit for Dissolved Antimony. The sample DUP (480-162151-1), W-03D (480-162151-2), US-04D (480-162151-3), US-06D (480-162151-5), US-03D (480-162151-6), W-08D (480-162151-7) and (MB 480-502822/1-A) associated with this ICV was non-detect for the affected analytes; therefore, the data have been reported.

Method 6020A: The laboratory control sample (LCS) for preparation batch 480-502822 and analytical batch 480-506118 recovered outside control limits for the following analytes: Dissolved Antimony. These analytes were biased high in the LCS and were not detected in the associated samples, DUP (480-162151-1), W-03D (480-162151-2), US-04D (480-162151-3), US-06D (480-162151-5), US-03D (480-162151-6) and W-08D (480-162151-7); therefore, the data have been reported.

Method 6020A: The continuing calibration verification (CCV 480-506118/17) associated with batch 480-506118 recovered above the upper control limit for Dissolved Selenium. The samples associated with this CCV, DUP (480-162151-1), W-03D (480-162151-2), US-04D (480-162151-3), US-06D (480-162151-5), US-03D (480-162151-6) and W-08D (480-162151-7), were non-detects for the affected analytes; therefore, the data have been reported.

Method 6020A: The recovery of Post Spike, (480-162151-D-4-A PDS), in batch 480-502822 exhibited results outside the quality control limits for Dissolved Antimony. However, the Serial Dilution of this sample was compliant. Therefore, no corrective action was necessary.

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Client: Waste Management

Job ID: 480-162089-1

Project/Site: H.O.D. Landfill

## Job ID: 480-162089-1 (Continued)

## Laboratory: Eurofins TestAmerica, Buffalo (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

## **General Chemistry**

Method 2320B: The results reported for the following sample do not concur with results previously reported for this site: W-03D (480-162151-2). Reanalysis was performed, and the result(s) confirmed.

Method 350.1: The inter-parameter relationship between Ammonia and Total Kjeldahl Nitrogen does not meet acceptable criteria for the following sample: R-01D (480-162089-2). This has been confirmed for both analytes.

Method 353.2: The results reported for the following sample do not concur with results previously reported for this site: W-03D (480-162151-2). Reanalysis was performed, and the result(s) confirmed.

Method 353.2: The following sample was analyzed outside of analytical holding time due to lab error: US-05D (480-162151-4). Results match historical data.

Method 9012B: The laboratory control sample (LCS) for preparation batch 480-505161 and analytical batch 480-505430 recovered outside control limits for the following analytes: Cyanide.

Method 9012B: The following samples were analyzed outside of analytical holding time due to lab error: R-01D (480-162089-2), US-01D (480-162089-3) and US-02D (480-162089-4). Results match historical data.

Method 9012B: The laboratory control sample (LCS) for preparation batch 480-505424 and analytical batch 480-505487 recovered outside control limits for the following analytes: Cyanide.

Method 9012B: The continuing calibration verification (CCV) associated with batch 480-505487 recovered below the lower control limit for Cyanide. The following samples are impacted: US-05D (480-162151-4), US-05D (480-162151-4[MS]), US-05D (480-162151-4[MSD]), US-06D (480-162151-5), US-03D (480-162151-6) and W-08D (480-162151-7).

Method 9012B: Reanalysis of the following samples were performed outside of the analytical holding time due to failure of quality control parameters in the initial analysis: US-05D (480-162151-4), US-05D (480-162151-4[MS]), US-05D (480-162151-4[MSD]), US-06D (480-162151-5), US-03D (480-162151-6) and W-08D (480-162151-7). Both sets of data are being reported.

Methods 9251, SM 4500 Cl- E: The results reported for the following samples do not concur with results previously reported for this site: W-03D (480-162151-2). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Client: Waste Management
Project/Site: H.O.D. Landfill
Job ID: 480-162109-1

Job ID: 480-162109-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-162109-1

Comments

No additional comments.

Receipt

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Client: Waste Management

Project/Site: H.O.D. Landfill

Job ID: 480-162142-1

Job ID: 480-162142-1

Laboratory: Eurofins TestAmerica, Buffalo

**Narrative** 

Job Narrative 480-162142-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/6/2019 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

## **General Chemistry**

Method 420.1: The method blank associated with preparation batch 480-505886 and analytical batch 480-506451 contained Total Recoverable Phenolics greater than the reporting limit (RL). The following sample was reanalyzed with concurring results, therefore only the original results have been reported: SW-02 (480-162142-2).

Method 420.1: The method blank for preparation batch 480-507705 and analytical batch 480-507926 contained Total Recoverable Phenolics above the method detection limit. This target analyte concentration was less than the practical quantitation limit (PQL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method 9012B: The laboratory control sample (LCS) for preparation batch 480-505161 and analytical batch 480-505430 recovered outside control limits for the following analytes: Cyanide.

Methods 9251, SM 4500 CI- E: The results reported for the following samples do not concur with results previously reported for this site: SW-01 (480-162142-1), SW-02 (480-162142-2) and SW DUP (480-162142-3). Reanalysis was performed, and the result(s) confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Client: Waste Management Job ID: 480-162143-1
Project/Site: H.O.D. Landfill

Job ID: 480-162143-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-162143-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/6/2019 9:45 AM and 11/7/2019 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.4° C and 2.4° C.

#### GC/MS VOA

Method 8260C: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: W-06S (480-162224-6). Elevated reporting limits (RLs) are provided.

Method 8260C: The laboratory control sample (LCS) for analytical batch 480-504097 recovered outside control limits for the following analytes: 1,1,1-Trichloroethane, 1,1-Dichloroethane and Vinyl chloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. The following samples are impacted:DUP 02 (480-162224-1), G-102 (480-162224-2), PZ-04U (480-162224-3), US-06S (480-162224-5), W-06S (480-162224-6) and TB2 (480-162224-7).

Method 8260C: The method blank for analytical batch 480-504501 contained Methylene Chloride above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated samples were not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL. The following sample is impacted:US-04S (480-162224-4).

Method 8260C: The laboratory control sample (LCS 480-504501/8) for analytical batch 480-504501 recovered outside control limits for the analyte Methylene Chloride due to laboratory contamination. The following samples are impacted US-04S (480-162224-4).

Method 8260C: The analyte Methylene Chloride was detected in the sample in analytical batch 480-504501 at level above the requested reporting limit. Methylene Chloride is a known lab contaminant, therefore, the sample detection for Methylene Chloride in the analysis may potentially be due to laboratory contamination and should be evaluated accordingly. The following sample is impacted:US-04S (480-162224-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### HPLC/IC

Method 300.0: The following samples were diluted due to the abundance of non-target analytes: PZ-04U (480-162224-3) and W-06S (480-162224-6). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method 6010C: The Dissolved Barium result reported for the following sample did not concur with results previously reported for this site: US-04S (480-162224-4). Reanalysis was performed, and the result confirmed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **General Chemistry**

Method SM 2540C: Due to the matrix, the initial volume(s) used for the following sample deviated from the standard procedure: W-06S (480-162224-6). The reporting limits (RLs) have been adjusted proportionately.

Method 9012B: The laboratory control sample (LCS) for preparation batch 480-505161 and analytical batch 480-505430 recovered outside control limits for the following analytes: Cyanide. Samples were reanalyzed with concurring results and have been reported.

Method 9012B: The laboratory control sample (LCS) for preparation batch 480-505425 and analytical batch 480-505655 recovered outside

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Client: Waste Management

Project/Site: H.O.D. Landfill

Job ID: 480-162143-1

Job ID: 480-162143-1 (Continued)

## Laboratory: Eurofins TestAmerica, Buffalo (Continued)

control limits for the following analytes: Cyanide. Samples were reanalyzed with concurring results and have been reported.

Methods 9012B: The laboratory control sample (LCS) for preparation batch 480-505463 and analytical batch 480-505685 recovered outside control limits for the following analytes: Cyanide. Samples were reanalyzed with concurring results and have been reported.

Methods D516-90, 02: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 480-507958 were outside control limits. Re-analysis was not performed due to holding time limitations. The associated laboratory control sample (LCS) recovery was with in acceptance limits. (480-162224-D-5 MS) and (480-162224-D-5 MSD)

Method Nitrate by calc: The following samples were analyzed outside of analytical holding time due to lab error: PZ-04U (480-162224-3) and W-06S (480-162224-6). Results match historical data for these locations.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Client: Waste Management Job ID: 480-162148-1
Project/Site: H.O.D. Landfill

Job ID: 480-162148-1

Laboratory: Eurofins TestAmerica, Buffalo

Narrative

Job Narrative 480-162148-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 11/6/2019 9:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.0° C and 2.4° C.

#### GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### GC/MS Semi VOA

Method 8270D LL: The continuing calibration verification (CCV) analyzed in batch 480-504776 was outside the method criteria for the following surrogate: 2,4,6-Tribromophenol (Surr). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated. The following sample isimpacted:VW-03 (480-162148-1).

Method 8270D LL: The continuing calibration verification (CCV) associated with batch 480-504776 recovered outside acceptance criteria, low biased, for Pentachlorophenol. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. The following sample is impacted:VW-03 (480-162148-1).

Method 8270D LL: The continuing calibration verification (CCV) associated with batch 480-504776 recovered above the upper control limit for Bis(2-ethylhexyl) phthalate and Simazine. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: VW-03 (480-162148-1).

Method 8270D LL: The Method Blank (MB) for preparation batch 480-503749 and analytical batch 480-504776 recovered outside control limits for the following surrogate: p-Terphenyl-d14. This surrogate is biased high and no detections were found for associated analytes in the following affected samples: VW-03 (480-162148-1). Therefore, the data has been reported.

Method 8270D LL: The continuing calibration verification (CCV) associated with batch 480-505390 recovered above the upper control limit for Simazine and Bis(2-ethylhexyl) phthalate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: VW-03 (480-162148-1).

Method 8270D LL: The continuing calibration verification (CCV) associated with batch 480-505390 recovered outside acceptance criteria, low biased, for Pentachlorophenol. A reporting limit (RL) standard was analyzed, and the target analyte was detected. Since the associated samples were non-detect for this analyte, the data have been reported. The following sample is impacted:VW-03 (480-162148-1).

Method 8270D LL: Internal standard responses were outside of acceptance limits for the following sample: VW-03 (480-162148-1).

Method 8270D LL: Surrogate recovery for the following sample was outside control limits: VW-03 (480-162148-1). Re-extraction and/or re-analysis was performed outside of preparation holding time. Both sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

#### **GC VOA**

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Client: Waste Management

Job ID: 480-162148-1

Project/Site: H.O.D. Landfill

Job ID: 480-162148-1 (Continued)

Laboratory: Eurofins TestAmerica, Buffalo (Continued)

#### GC Semi VOA

Method 8081B: All primary data for analytical batch 503110 is reported from the RTX-CLPI column.

Method 8082A: All primary data for analytical batch 503150 is reported from the ZB-5 column.

Method 8151A: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 500-514899 and analytical batch 500-514999 recovered outside control limits for the following analytes: Picloram. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8151A: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch preparation batch 500-514899 and analytical batch 500-514999 recovered outside control limits for the following analytes: Dinoseb and Dalapon.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

Method 6020A: The initial calibration verification (ICV 480-506119/5) recovered above the upper control limit for Antimony. The samples VW-03 (480-162148-1) and (MB 480-502818/1-A) associated with this ICV were non-detects for the affected analytes; therefore, the data have been reported.

Method 6020A: The continuing calibration verification (CCV 480-506119/10) recovered above the upper control limit for Selenium. The samples (MB 480-502818/1-A) associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **General Chemistry**

Method 9012B: The laboratory control sample (LCS) for preparation batch 480-505161 and analytical batch 480-505430 recovered outside control limits for the following analytes: Cyanide.

Methods 420.1, 9065: The following sample was analyzed outside of analytical holding time due to laboratory error: VW-03 (480-162148-1).

Method 351.2: The method blank for preparation batch 480-503445 and analytical batch 480-503567 contained Total Kjeldahl Nitrogen above the method detection limit. This target analyte concentration was less than the practical quantitation limit (PQL); therefore, re-extraction and re-analysis of samples was not performed. VW-03 (480-162148-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **Organic Prep**

Method 548.1: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 480-503382.

Method 3510C: The following sample was re-prepared outside of preparation holding time due to surrogate failing low: VW-03 (480-162148-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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# Appendix I

Compact Disc (CD) with the Electronic Data Deliverable (EDD) files and Laboratory Reports for the Second 2019 Semi-annual Sampling Event (November 2019)